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AS THE EDITOR SEES IT

IF synthetic detergents eventually take over the soap markets of the world, where do inedible fats and oils then find a market? Concern over the expanding use of synthetic detergents at the expense of soaps has been expressed more frequently of late by fat producers than by soapers. The reason for this may be that many soapers can and have adjusted their operations to follow the new trend, that is, many have added synthetic detergents to their lines. They are equipped to meet the new demand as well as the old. Fat and oil producers are not in as flexible a position. If the soap kettle dries up as a large tonnage fat consumer, they see no other ready avenue for the disposal of their inedible production.

Although we feel that their concern about the future may have some justification in long-range thinking, we do not believe that any permanent, serious cut in soap use for strictly technical reasons is as yet on the horizon. If it comes, that day is some years away. Reduced demand and low prices for some fats undoubtedly have induced gloomy thinking on this subject. When the storm is bad and the clouds are black, the end of the world is easy to picture.

Proposed research by USDA under the Research and Marketing Act to find new uses for oils and fats in the light of the recent decline in demand, we feel, could be undertaken profitably even though in our belief the present situation is temporary. Detergents have made progress and will continue to make progress, some of it at the expense of soaps, but we do not believe that the extent of the latter can be gauged with any accuracy from the present fat market slump. So far, the duration of the slump has been too short to give any real indication of the long-range trend. Insufficient opportunity has been given supply and demand to correct what was obviously a lop-sided situation. Several years may be needed before a true trend in soap kettle fat consump-

tion can be determined. Nevertheless, we feel that this research project very definitely is warranted. In ten years, it could pay off handsomely. But in the meantime, the marketing attitude of most oil and fat producers might well undergo a change. Less attention to a quick dollar and more to a sensible long-term marketing policy could likewise pay off.

PRESSURE to tax coconut oil at sharply higher levels may be a form of window dressing in Washington designed to prevent any real consideration of removing the present three-cent excise tax on this oil. Or, conceivably it could be a serious attempt to tax this oil right off the American market. That some so-called farm and dairy groups would like to accomplish such a feat is no particular secret. However, such an attainment might prove to be a powerful boomerang.

For every pound of coconut oil that goes into the soap kettle, four or more pounds of tallow, grease or other fat of American farm or ranch origin are used. Kill the quality of the soap by eliminating coconut oil, and it is not a far step to kill the market. American housewives will not buy war-quality soaps from here on in. If they are forced to buy synthetic detergents to wash the old-man's work pants because the soap is no good, tallow and grease will lose four times as much as coconut oil. This interesting point was made recently in a speech by Lee J. Chase, Jr. of Spencer Kellogg & Sons. Those who talk of taxes up to ten cents on coconut oil might pause and reflect — and again read Mr. Chase's address which we published last month.

As a political football, coconut oil continues to hold a high ranking in Washington. But, as we mentioned before, it could be kicked around too much. It could be shut out from the American market completely and put two-thirds of our small soapers out of business. It could be the

means of speeding up a trend toward the wider use of synthetic detergents and the eventual elimination of the market for half-billion pounds of inedible tallow and grease annually. It could be, —and no foolin'.

RECENTLY, Charles Luckman, president of Lever Brothers Company, speaking before the Los Angeles Chamber of Commerce, urged business to "abandon its foxholes of fear and regain the faith that built America . . ." He went on to say that "for every minor symptom of decline, there are a hundred major elements of economic stability." And he challenged business to "open its eyes to the facts of America's economic strength and to act with courage and determination to meet the opportunities these economic facts present." Then, he outlined a five-point program which included "lower prices, sound wage policies, increased productivity in cooperation with labor, development of new products, methods and services, an eagerness for enterprise and a revitalized initiative." And, he contended, current economic gloom springs from business America trying to talk itself into a depression.

With the obvious aim of Mr. Luckman to lift business out of the doldrums with his "fighting faith" appeal, we are in wholehearted accord. When he mentions lower prices and "sound wage policies," we feel he is somewhat vague. Just what *are* "sound wage policies?" When he tells business to abandon its foxholes and regain the faith that built America, we feel he might also look for the reasons why business occupies foxholes, if it does, and why it has lost faith, if it has. And when he mentions "revitalized initiative," we suggest also that he might find out why it has become devitalized, if it has.

Business has lost faith in America, Mr. Luckman stated, but we believe that he is dead wrong. Business has lost faith in the present administration in Washington, not America. If business occupies a foxhole, maybe it does so because it fears what Washington will do next. If business initiative is dead, could it be that tax policies of the administration have been a factor in killing it? And as for business talking itself into a depression, we might ask just when did it become

advantageous for business to kid itself in regard to economic facts. The Pollyannas of 1929 tried it and did more harm than good.

On the whole, business leaders with long years of experience, some heads of large corporations and others the owners and builders of their own small enterprises, cannot all be wrong. And knowing this in the light of their own backgrounds of experience, they may resent the role of scared rabbits in which Mr. Luckman has cast them. But, if they are scared, maybe a search for the real reasons might be the first step in eliminating their fears. Deficit spending? Unbalanced budget? Threats of government competition with industry? Failure to implement Hoover report? Fantastic farm program? Public debt? Need more be mentioned?

BECAUSE soaps and detergents are exempt from the provisions of the Food, Drug and Cosmetic Act, some members of the Senate agriculture subcommittee on the utilization of farm crops are reported "disturbed." This Washington agriculture committee group, known as the Gillette group because it is headed by Senator Guy M. Gillette of Iowa, is said to be toying with the idea of legislation to bring all soaps and detergents, even including common laundry soaps, into the regulatory fold of the government. Standards for content and labeling regulations would be set up ostensibly for enforcement under the Food, Drug and Cosmetic Act.

This subcommittee, incidentally, is the same one from which sprung the oil and fat "equalization fee" proposal. Now, that it is so deeply "disturbed" because soaps and detergents are without federal regulation, we wonder what new anti-soap industry idea will next arise from its deliberations. If this subcommittee is not out to "get" the soap industry, then it is putting on the best imitation of such a maneuver we have viewed in a long time.

Could this latest proposal be a veiled threat of some sort? Some more political window dressing with which Washington abounds? But, if the suggestion is sincere, then let the subcommittee look over the record of soaps and detergents for the past twenty years. Government regulation is no more needed than a fur coat at the equator.

THE ability of soda ash to bind a considerable amount of water in the form of water of crystallization is a property most useful to soap manufacturers. This is one of the chief reasons why smaller soapmakers, manufacturing the stronger types of soap powders or granules, find soda ash one of the most useful of alkali builders for these soaps.

The maker of this type of product finds himself running into difficulties, however, in the warmer part of the year because at temperatures above 90°F. crystalline soda ash shows signs of deliquescence and the soap product containing soda ash is too moist for

tion of about 102 lbs. of soda ash to 180 lbs. of water. At this ratio the crystals have a melting point of about 90°F. and at normal room temperatures are moist to the touch. Therefore, the soapmaker generally uses a smaller amount of water in his charge closer to the proportion of 100 to 100 in order to achieve a firmer product.

The solution of one molecule Na_2CO_3 in one molecule of water generates more heat than the solution of this monohydrate in nine additional molecules of water, as can be calculated from colorimetric measurements. The first molecule of water with its higher colorimetric reaction value is actually bound more firmly than the tenth molecule of water.

In cooler weather below 85°F., the soap mass poured on the floor to a depth of one foot or more, seldom needs more than 48 hours of cooling, provided the soap is turned over and broken up to some extent at the end of 24 hours. However, in southern climates it is necessary to pour the soap in much thinner layers, to break up the soap into much thinner slices and to turn the mass over a number of times before it is ready for grinding.

In order to speed up the crystallization and to reduce the space required for handling the job, some small soapers have used square wooden trays placed one upon another. The trays are constructed so that a pair of opposite sides are twice the height of the other two sides. Convenient heights are 8 to 10 inches and 4 to 5 inches. The heated soap is pumped or run by gravity into these trays to a depth of 3 or 4 inches. The trays may be stacked in such a fashion that one side of the stack is sealed and the other side has a number of long tunnels running through it. The cooling process may be speeded up by blowing air from fans through these tunnels.

Of course a much more efficient but also more costly method of speeding up the crystallization consists of passing the heated soap over a chilling roll. The soap can be crystallized effectively without excessive water circulation if the layer is kept to a thickness of 1/16 to 1/64 of an inch and air is circulated over its surface by

SODA ASH —as a Soap Builder

By Andrew Treffler

easy processing. In temperatures ranging from 78° to 100°F. which prevail in southern United States four to eight months during the year the soapmaker is faced with the need for the new or modified procedures to be described.

In the most common method making use of the crystallization properties of soda ash, the warm semiliquid product of 65 per cent neat (salted out) soap content is mixed with the alkali builders and other ingredients until a uniform mass is obtained. The product is then run into frames for cooling, or in the case of the smaller plants, cooled in boxes or simply on the floor where it crystallizes to a solid mass which can be pulverized a few days later.

During the cooling period, a large portion of the water is chemically bound by the anhydrous alkalis such as soda ash, tetrasodium pyrophosphate and certain others.

Soda ash, the cheapest and commonest alkali in use, is able to bind ten molecules of water in the propor-

means of a fan as the soap is scraped off in the form of ribbons.

The proper selection of fats and alkali builders as well as the complete saponification of the fat are prerequisites to successful grinding. The addition of liquid sodium silicate having one or more silicate (SiO_2) molecules uncombined with NaO_2 will react with the sodium carbonate and lower its water-binding capacity. This increases the tendency of the soap particles to cling to one another and consequently places an added burden on the hammer mill. The addition of rosin or tall oil has a similar action.

The removal of glycerin from such a soap is neither necessary nor desirable as its presence is very beneficial in counteracting the tendency toward dust formation during the grinding operation. A properly saponified 15 per cent soap powder containing about 1 per cent glycerin, 44 per cent soda ash and 40 per cent moisture pulverizes easily in almost any hammer mill with very little dusting. This method has been in wide use in past years and furnishes a fairly satisfactory powder but it has the disadvantage of requiring large floor space or a number of boxes, several days for the cooling period, and considerable labor in breaking up the material in order to speed up cooling. On the whole it represents getting by with an absolute minimum of capital equipment.

IN the spray process the warm soap and alkali builder mixture in liquid form, is pumped into the spray tower where it is sprayed through a rotating nozzle. The fine particles from the spray are either cooled or dried by an air current. If the mixture has a high percentage of soda ash and a fatty acid content of 10 per cent to 30 per cent the spraying is conducted preferably at a temperature below 15°C . so that the soda ash will hold its water of crystallization. If the mixture contains a high percentage of soap with a fatty acid content of more than 40 per cent the water is removed by spraying the soap into a hot air current. This process furnishes a soap powder of excellent quality and the rate of production is high. However, the capital invest-

Ways are described to overcome in warmer regions the problem of excessive moisture in soaps made with soda ash as a builder.

ment for such an outlay and installation is very high and the small soap-maker, not too well financed in many cases, will be interested to learn of simpler methods.

One such method might be termed the "soda surfacing" method. The anhydrous soda ash is coated by a thin layer of soda soap which is added to the liquid or paste phase. Whereas in the crystallization method the proportion of water to soda ash can be about 100 to 100, in the soda surfacing method the proportion is only 15 or less to 100. When three parts of soda ash are mixed with one part of 65 per cent Na-paste soap of which 50 per cent is of tallow, and 50 per cent Tall oil base, cooled to room temperature, only about 8 per cent water is crystallized in the soda ash. Under these conditions almost the entire surface of the soda ash is covered with a fine soap film. The powder develops some heat during the first two minutes of mixing, but at the end of five to seven minutes mixing it has cooled and dried sufficiently so that it is almost dry to the touch.

This soap film, even though not completely uniform, is extremely thin, perhaps thinner than soap films produced by other processes. This unusual particle structure of soda ash core surrounded by a soap film may account for the rapid rate of solution observed with this type of soap granule. Particularly if the soap film is incomplete, the enclosed soda ash particles, upon contact with water should furnish enough heat to erupt the soap film and cause it to dissolve more rapidly.

A soap powder containing 20 per cent anhydrous soap can be produced from 65 per cent soda soap of 50 per cent tallow and 50 per cent Tall

oil base. One part of such a 65 per cent soda soap, at room temperature a paste, is mixed for seven minutes with two of tetrasodium pyrophosphate in a powerful rotary mixer.

A soap powder of high soap content can be obtained by a different method involving the addition of soda ash to the fatty acid mix rather than to the soda soap. This process, termed the fatty acid soap process, is extremely simple and like the soda surfacing process is independent of climatic conditions. The soap can be produced by this method without recourse to a boiler, kettle, or other means of heat supply. The exothermic chemical reaction between soda ash and fatty acid was discussed in an article on "Fatty Acid Soap Process" in *Soap and Sanitary Chemicals*, September, 1943.

New for the soapmaker will be the carrying out of this reaction in the dry phase using a dry mixer. By mixing for about five minutes three to four parts of soda ash with one part of liquid or liquefied fatty acid a fine soap powder is obtained. Almost any fatty acid mixture can be used provided it is in the liquid phase. If high titre fatty acids from cottonseed oil, tallow and others in the semi-solid state are used, additional mixing time is necessary. The reaction produces sufficient heat for melting such fatty acids but oftentimes the melting is not complete before a considerable portion of the soap is formed and the batch solidifies in the container before an homogenous charge has been effected. However, if all of the fatty acids are well mixed and in the liquid state, the reaction will be complete within five to seven minutes and the product can be packed at once. The time of mixing can be reduced further by heating the fatty acids close to 100°C . At such higher temperatures the per

cent of fatty acids can be increased and soap powders of 30 per cent soap content will result.

Tall oil can also be used in this process to considerable advantage. It is preferable to blend it with 50 per cent of other fatty acids and carefully perfume the product. The powder produced by this method is particularly recommended for use in abrasive cleansers where the rapid solubility of the thin soap film and the heat of reaction between the enclosed soda ash particles and water aid in speeding up cleansing action.

The product, as it is discharged from the dry mixer, consists of about 98 per cent finely pulverized powder and 2 per cent coarse lumpy material. By running the powder through a 5 or 10-mesh sieve set at an angle of at least 45° the coarser material is separated. The coarse material may then be pulverized and added to the main batch. Formation of this coarser material may be eliminated almost entirely by reducing the distance between the mixing plates and the inner wall of the mixer. In cases where a soap powder of high percentage anhydrous soap is in demand, the process described in the article, "Fatty Acid Soap Process," *Soap*, September, 1943, is to be preferred.

A method for turning a neutral fat quickly and simply into a soap of high fatty acid content has certain advantages, particularly in southern part of the United States where there are relatively few fat splitting plants. Then, too, the fatty acid soap process, although fast and simple to operate, has the disadvantage that fatty acids are usually considerably higher in price than the corresponding neutral fats.

The writer has developed a cold process for converting neutral fats into a high fatty acid content

soap. The process makes use of a dough mixture.

SIX hundred twenty-five parts of house grease together with 100 parts of powdered acid sodium bicarbonate are mixed from 5 to 10 minutes followed by the addition of a solution made up by dissolving 150 parts of caustic soda flakes in 125 parts of water. The saponification of the fat layer, covering the bicarbonate particles, will take place. The stirring should be continued until the bicarbonate is transformed into the sodium carbonate form and as long as free fat and free caustic soda are present. In five or ten minutes the mixture becomes viscous and finally quite plastic. At this state the contents of the mixer are emptied into a tray or on the floor where saponification continues. Oftentimes the heat of the reaction is so high that the layer breaks open and steam is emitted. The saponification is complete at the end of a half hour or an hour and the mass can be cut apart and ground a few hours later. It should be dust-free because of the high amount of glycerine present. The saponification can be retarded if the layer is spread out only one to three inches thick or if the charge is run into bar soap trays. The saponification will always be complete, no matter the length of time, provided the correct proportion of raw materials is taken and adequate stirring has taken place.

The emulsion of the fat and caustic soda is hastened by the catalytic action of the acid sodium pyrophosphate. The carbonic acid may be said to adhere to the $-\text{COOCH}_2-$ group on the neutral fat and combine with the concentrated caustic solution. The exothermic nature of this reaction is sufficient to start and to complete the saponification of the neutral

fat, particularly if the charge is well mixed and the emulsion well formed. It is essential in this reaction that a minimum amount of water be used for dissolving the soda ash. Other alkalies and acids reacting with caustic soda and adhering to neutral fats in this manner will also serve as successful coupling agents for the reaction. "Sequestrene" (made by Alrose Chemical Co.) and a number of other synthetic detergents highly compatible with alkali soaps can be used in their anhydrous state. A few of the many reactions possible by this process are listed in Table I.

The process requires but a minimum amount of equipment, time and labor. It furnishes soap powder and bar soap of excellent quality. It has been proved by titration test that such 65 per cent soaps, containing tetrasodium pyrophosphate or tripolyphosphate are equal to the 88 per cent to 92 per cent soap powders on the market.

The high glycerine content of these products insures that the grinding operation will be free from dust troubles. The glycerine also acts in the cleaning process as a coupling agent to water-insoluble organic impurities and also increases the water solubility of the product.

Such 62-72 per cent soaps do not have to be discharged from the mixer in the form of a dough. Their reaction can be completed in the mixer only if a regular soap crutcher, equipped with a high power motor, a powerful stirrer and an outside jacket is used. The reaction reaches the stage in about one-half hour at which a high volume of steam is discharged. By stirring the doughy mixture very little and by turning on the steam in the jacket, the reaction can be speeded up. As soon as the steam is puffing, the soap begins to harden and the stirrer has to be kept going in order to pulverize the soap. When it is finally pulverized down to about 10 mesh size, the stirring cools off the soap a bit and it then can be discharged from the crutcher for further grinding. By adding hot water it can be turned into a paste that can be run into a frame for the manu-

(Turn to Page 137)

TABLE I

62% to 72% Sodium Soaps

	65%	65%	65%	70%	50%	50%
Tallow or house grease (purified)...	65%	65%	65%	70%	50%	50%
Coconut oil .....	.....	.....	.....	.....	15	10
Tripolyphosphate .....	.....	.....	10	10	10	.....
Acid sodium pyrophosphate .....	.....	.....	.....	.....	.....	10
Sodium bicarbonate	11.1	8	.....	.....	.....	.....
Caustic soda	13.3	14.6	10.5	11.5	12	14
Water	10.6	12.4	14.5	8.5	13	16
Reaction	slow	slow	fast	slow	fast	fast

HOW ARE DETERGENTS

RETAIL grocers in Chicago are not hiding their stocks of synthetic detergents in any back room, as did a Brooklyn dealer mentioned in the survey made by SOAP AND SANITARY CHEMICALS to discover what retailers in the New York City area think of the new "soapless" soaps. Chicago grocers may not (and many of them probably do not) know clearly much about the chemical nature of synthetic detergents, but just the same, they have these products right up front where they can be seen and sold.

The evidence that a lively interest in the new synthetics prevails in Chicago can be inferred by the casual observer passing almost any business street in the city's outlying residential sections. Store window displays of synthetics can be spotted from a long way off, not only in the big super markets but in the little groceries and delicatessens, and frequently in drug or hardware stores, where bright colored cartons of blue, red, green, orange, etc. are very much in evidence.

It cannot be said, however, that Chicago dealers are like that gal Beulah, who nightly on the radio professes to "love that Dreft." The new "wonder cleaners," it is admitted sell "like hot cakes," which ought to make any dealer fond of them. Paradoxically, however, retailers are lacking in affection for synthetics, and the explanation of this attitude will be developed later on.

Two good reasons are advanced for the popularity of synthetic detergents with consumers in Chicago. Aggressive advertising is one. But, probably more important and, in the long run the soundest reason, is the fact that the synthetics perform well.

Advertising of synthetic detergents is very widespread; newspapers carry a large volume, often full pages, while radio listeners are constantly

—By H. H. Slawson—

Synthetic detergents perform well in Chicago's hard water, are liked by housewives. Dealers, with an eye on short profits, feel different.

urged to buy this or that brand.

Radio "soap operas" still largely promote the standard products leaving place for the synthetics mostly in the program breaks, 40-second singing commercials and the continuous dining of these brief messages into listeners' ears can accomplish a great deal in moving stocks from grocers' shelves. Dealers questioned all agreed that this type of promotion is having a tremendous effect in upping sales in Chicago.

The fact that the detergents live up to advertising claims made for them is considered more important by grocers. They wash well in the hard water of Lake Michigan which Chicagoans use. Synthetic detergents, of course, are at their best in hard water, and, as knowledge of this spreads by word of mouth, detergents account for a larger share of the consumer's cleansing material dollar.

This voluntary, word-of-mouth advertising by users, say the Chicago dealers, is booming detergent sales in their city. Users even tell their grocers how highly they think of synthetic detergents. Nor are satisfied users slow to tell their neighbors about synthetics, dealers are learning.

It should be pointed out however, that in Chicago the older, standard types of laundry bars and flakes are still selling well. Promotion of "American Family" (P. & G.) flakes and bars for nearly a generation has instilled in the minds of consumers in the Chicago area the value of these

products as hard water soaps. The maker claims in its advertising that this brand outsells all other soaps in the Chicago area three to one.

"Super Suds," "Rinso," "Oxydol" and many other soaps in flake or granular form also are good sellers. But grocers don't give much satisfactory information on the relative sales positions of these products. The closest any dealer came to giving a factual reply is that soaps and detergents are selling "about 50-50."

Although this survey of the Chicago market was limited, it is felt that the situation revealed here is fairly typical of the city and its adjacent suburban districts. The observations recorded here are based on conversations mainly with small store proprietors, all of whom operate what are known as "the corner grocery" type of store. However, the small "corner grocery" store, typical of all sections of the U. S., is ideally suited for a study of this sort since the operator (usually the owner) is called upon for product information far more frequently than is the case in the large super-market type grocery store. The area selected for this check was the Ravenswood residential section of the northwest side of Chicago. Stores visited are located on side streets, usually in the midst of two family or larger apartment buildings and some small private homes.

In questioning the various dealers it was quite evident that they

S SELLING IN CHICAGO?

do not think of the new products as "synthetic detergents," but rather as just another brand of soap with superior cleansing power.

"Do you carry the synthetic detergents?" the interviewer would ask dealers, who without exception answered "No."

But don't you handle products such as "Tide," "Surf," "Vel," "Fab"? the writer would ask. Usually the response was, "Oh, that stuff? Yes, right up there," indicating its location on the shelves or racks.

Only one dealer was encountered who had any comprehension of the difference between soaps and "soapless" soaps. Another dealer thought he knew what it was all about, but it turned out that he was thinking of something else. What he had in mind was that other widely advertised product, sodium acetyl salicylate. The one exception was the owner of a small store who mentioned that he might know more about it than the average

grocer, because he had studied chemistry.

Evidence that dealers draw no distinction between the two types of cleaners is quite obvious in the way in which soaps and synthetic detergents are displayed on store shelves. For example, "Super Suds" was stacked next to a display of "Breeze," "Oxydol" or "Surf," with no apparent effort to distinguish between the two groups of products.

For psychological effect the giant size carton of one brand may often be flanked by the smaller size containers of other products, but that is about the extent of the application of scientific salesmanship. This is true not only in the small stores, but even in the chains and super markets as well. Salesmanship in groceries seems to have become a lost art since the birth of the self-service idea.

Soaps are sold on price only, plus personal preference of the purchasers, based on their experience, say

the dealers questioned. It's all a matter, they maintain, of paying your money and taking your choice. And, in Chicago, as has been pointed out, the soap customer's choice is affected both by what she reads and hears and what she has learned through actual use.

Dealers do cooperate with the manufacturers when special promotions are staged. Newspaper announcements of reduced price sales, one-cent offers, coupons, or other forms of special offers to move stocks, are followed by the appearance of ribbon stickers on windows of stores, stating that this grocer will "redeem your coupon here," or that the store stocks the goods at the current bargain price.

During special promotions some small dealers build displays for the sale, but since they do not have large stocks on hand, these showings scarcely have the effect of the mass displays made by the larger stores in the community's main trading district.

This inability of smaller dealers to carry large inventories was emphasized by the one dealer, who stated, "there are too many brands (of soap and detergents) on the market. As he explained his problem, he has to find ways and means to lure the trade before it gets to the super markets nearby. To do that he must have a relatively large selection of soap and synthetic detergents from which the customer can choose. Otherwise, he pointed out, if the grocer is unable to supply the product the customer requests she may not come back to the store. As a result, the grocer feels that he must pay close attention to what products are most in demand and be sure to stock them. He reports a high degree of success in providing the products most often asked for by the consumer. But, soap, he said, is something else. Peo-

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"They're chemists from Polgate - Calmolive - Peek! Maybe they can answer your question, Mrs. Belch!"

World Outlook for Coconut Oil

By George A. Parks, Jr.

Fats and Oils Branch,
Production and Marketing Administration,
U. S. D. A.



Copra being discharged from the "Trein Maersk" of the Fred Olsen Line at the Port of Oakland, Calif., Outer Harbor Terminal. Copra blower, extreme right, is loading truck which hauls copra to crushers.

WORLD production and export supplies of copra and coconut oil in the calendar year 1949 are expected to be larger than in 1948, when approximately 900,000 metric tons in terms of oil were exported from producing areas. The increased supplies available for export should come primarily from the Philippines and Indonesia.

On the basis of production capacity, it is estimated that the Philippines could produce up to 500 thousand metric tons in terms of oil for export this year as compared with exports of about 440 thousand tons in 1948. Production for actual export, however, will probably be less owing to the decline in prices of copra and coconut oil also. Export demand apparently will be less than 500,000 tons because of relatively greater declines in U. S.

prices of domestic fats and oils than for coconut oil. Philippine production in 1948 was reduced by major typhoons which occurred late in 1947, but even with the typhoon damage, exports of copra and coconut oil in 1948 exceeded the 1935-39 average by approximately 25 percent. There has been no major typhoon damage to affect 1949 production.

Indonesian exports of copra and coconut oil in 1949 will probably exceed 200,000 metric tons in terms of oil as compared with recorded exports of about 150,000 tons in 1948. Average prewar exports from this area exceeded 330,000 tons per year. There are several factors which have contributed to the comparatively slow recovery of the copra industry in Indonesia since the war. Among these has been a shortage of transportation, con-

sumer goods, and rice. Political and military disturbances in Indonesia also have adversely affected the production of copra and coconut oil. Nevertheless, exports from this area have gradually increased since World War II and should continue to improve.

EXPORTS of copra and coconut oil from Malaya and Ceylon in 1949 will likely exceed the 1948 level. Exports for the first quarter of 1949 from each of the countries were larger than in the corresponding period last year. Supplies from other areas are expected to equal or slightly exceed the quantities exported in 1948.

In order to evaluate the world outlook with respect to copra and coconut oil it is necessary to consider also the over-all export availability of all fats and oils which compete either

directly or indirectly for industrial or edible purposes. Coconut oil is used mainly for industrial purposes in the United States but is used largely for edible purposes in Europe, India, Indonesia, and the Philippine Republic.

WORLD production of all fats and oils in 1949 is expected to approximate prewar levels. At first glance this would seem to indicate that in 1949 the people of the world will again return to consumption levels which existed prewar. Such is not the case, for while production of fats and oils in 1949 may be near prewar levels, the population of the world has increased by over 10 percent from prewar. Also, per capita consumption in some countries, such as the United States, is at or near prewar levels. In other areas such as India, Africa, and Latin America, it has increased above prewar. It is interesting to note at this point that prior to World War I, India was a large net exporter of coconut oil and copra. Since 1929-30 India has been a net importer. This change has resulted largely from an increase in per capita consumption of soap. Prior to the first World War per capita consumption of soap in India was estimated to be about four ounces annually; during World War II it increased to eight ounces, and now it is estimated to be about twelve ounces. Within 5 years it is expected to reach 16 ounces. While these increases may seem small on a poundage basis or in comparison with United States per capita soap consumption, they are significant in that the rate has increased by 50 percent since the War and are more significant considering the population increase in India in the last quarter century.

Although world production of fats and oils in 1949 may approximate prewar levels, world trade in these commodities in 1949 is now estimated at no more than two-thirds of prewar when about six million tons of fats, oils, and oil-bearing materials (in terms of oil) moved into international trade. In the case of copra and coconut oil, however, export availabilities from the four principal producing areas in 1949 probably will be about 90 percent of 1935-39 average exports from

these areas. This is due to the fact that Philippine production has increased sufficiently from the 1935-39 level largely to offset reduced supplies from other areas, particularly Indonesia and Malaya.

Despite the fact that world export availabilities of all fats and oils are considerably below the prewar movement in international trade, it is estimated that total export availabilities are in approximate balance with "effective" demand. This does not mean there are no shortages or surpluses of particular types of fats and oils. Nor does it mean that supply and demand in each surplus producing area are in balance.

WITH respect to copra and coconut oil, there is little doubt that a ready demand exists for the entire exportable surplus of these commodities from Indonesia, Malaya and Ceylon. The estimated export supply from Indonesia reportedly is largely obligated through bilateral agreements, primarily with European countries. The major part of exports from this area goes to the Netherlands. Malayan exports also move largely to Europe. The United Kingdom has contracted for 40 thousand tons of oil from Ceylon for

1949. In addition, India, Pakistan and other countries very probably will take coconut oil from this area.

Aside from the fact that Europe is still short of fats and oils, the primary reason for expecting a ready demand for copra and coconut oil from the three areas mentioned is the fact that each of these sources of supply is a "soft currency" area. By purchasing fats and oils and other materials from "soft currency" areas to the limit of availabilities, European and other countries are able to conserve their limited supplies of dollars for the purchase of materials which either are not available or are not available in sufficient quantities from "soft currency" areas.

The situation in the Philippines is quite different. Prior to World War II over 80 per cent of Philippine copra and coconut oil exports were sent to the United States and it is only since the war that appreciable quantities have gone to other areas, principally Europe. The Philippines are a "hard currency" area. They trade in dollars. And for this reason, except for their exports to the United States, they must compete with other surplus producing areas, including the United States, for the limited supplies of dol-

Average Wholesale Price Per Pound of Coconut Oil, Crude, Soybean Oil, Crude, and Tallow, Inedible, Prime, at Specified Markets Annual 1935-39, 1946-48, Monthly January-April 1949

Year	Coconut Oil, Crude, Tank Car Lots ¹ , Pacific Coast	Soybean Oil, Crude, Tank Cars, Mid- western Mills	Tallow, Inedible, Prime, Carlots, Chicago
	<i>cents</i>	<i>cents</i>	<i>cents</i>
1935	7.37	8.1	7.1
1936	8.01	7.5	6.6
1937	8.96	8.1	8.3
1938	6.14	5.6	5.6
1939	6.05	4.8	5.5
1935-39 average ..	7.31	6.8	6.6
1946	12.86	14.6	11.2
1947	20.72	23.3	19.2
1948	26.28	22.3	16.0
1949 Jan.	18.19	14.3	9.2
Feb.	16.78	12.3	7.9
Mar.	17.56	10.8	6.4
April	17.15	10.5	5.2
May	18.75	10.8	5.6
June	17.38	9.4	5.5
July	17.80	9.7	5.4

Source: Compiled from material of the Bureau of Agricultural Economics.

¹ Beginning July 1942 quoted as c.i.f. bulk.

² Includes 3 cent excise tax.

³ Average for less than 12 months.



Bulk copra stored in transit shed in Outer Harbor Terminal at the Port of Oakland.

lar exchange. We have in this country large quantities of both edible and inedible types of fats and oils available for export. We also have oilseed cake and meal for export in competition with copra meal.

Prices of domestic fats and oils, both edible and inedible, in the United States are considerably below those for coconut oil. For example, in July coconut oil, crude, tankcar lots, Pacific coast, averaged 17.80 cents (including 3 cent excise tax) as compared with 9.7 cent soybean oil, crude, tankcars, midwestern mills. Tallow, inedible, prime, carlots, Chicago, averaged only 5.4 cents in July. So long as these price disparities exist, consumption of coconut oil in this country can be expected to remain at the relatively low levels of recent months. Also, with the material spread between prices of coconut oil and copra and domestic fats and oils there should be no appreciable increase in commercial stocks of copra and coconut oil in this country. Stocks have been reduced to near record lows during the last few months.

Coconut oil, however, is a strategic commodity to be stockpiled. For this reason stocks of coconut oil

in the United States can be expected to increase somewhat over present low levels owing to its procurement for the stockpile.

Copra and coconut oil are available at prices considerably below the 1948 level, and yet considerably above prices for competing types of domestic fats and oils. The removal of import controls for copra and coconut oil makes it possible to import these commodities from any areas without United States import licenses. By presidential proclamation provisions of Section 2470(a)(2) of the Internal Revenue Code, as amended, will again

become effective on Aug. 27. This section provides for an additional processing tax of \$0.02 per pound on coconut oil originating outside the Philippine Islands or United States possessions.

Detergent Market Talk

The competitive threat which synthetic detergents offer to soap has been overemphasized, in the opinion of Dr. Johann Bjorksten, head of Bjorksten Research Laboratories of Chicago and Madison, Wis. Speaking recently on a popular lecture series program at the Chicago Museum of Science and Industry, Dr. Bjorksten predicted that in time a "consumption equilibrium" will be reached. Demand will be stabilized, he said, at some certain ratio between synthetics and soap, with soap still in very large use and demand. Dr. Bjorksten declared that soaps are very good detergents and that in many cases there is no reason for going to synthetics, unless hard water resistance or resistance to chemical influences is a major factor.

The exact point at which consumption equilibrium will probably be stabilized, he said, will depend on the price picture and on the fluctuating price situation in fats, and also the price position of glycerin, which affects the overall cost of soap.

One question from the audience, at the conclusion of his discussion of "Soaps vs. Detergents," dealt with the effect of synthetic detergents on the skin, as in dish washing. In reply, Dr. Bjorksten said there are great differences between the various synthetics and, while many of them have less effect on the skin than soap, others have a more pronounced reaction.

Copra, (Oil Equivalent) and Coconut Oil: Exports from Major Areas of Production

Country	Average 1935-39 1,000 Metric Tons	1946 1,000 Metric Tons	1947 1,000 Metric Tons	1948 1,000 Metric Tons	Estimated 1949 1,000 Metric Tons
Philippines	356	386	643	¹ 443	500
Indonesia	339	34	96	¹ 153	200
Malaya	171	6	48	¹ 87	100
Ceylon	96	69	62	¹ 112	90
Total	964	495	849	795	890

¹ Preliminary.

Synthetic Detergents

... up to date

A review of the history, types and production of synthetics; their future outlook and a revised and expanded list of over 700 trade name products

By John W. McCutcheon

Reprints will be available from the author at 475 Fifth Ave., New York 17, N. Y.

THERE is no question that the fast growing synthetic detergent industry has won for itself a permanent place in the industrial and retail markets of America. One has only to review the statistics on manufacturing and sales to recognize this fact. How far the impetus stimulated by the war economy and continuing research will carry synthetic detergents remains a problem requiring careful study. Certainly the edge has been taken off production for the moment in the present period of readjusting prices. It is the author's firm opinion that in the field of synthetic detergents opportunities exist, which can only be appreciated by a study of the facts. It would appear that this is a most opportune time for stock-taking.

To understand the facts one must know something of the history, classes, methods of manufacture and the use of synthetics. To have some knowledge of the relationship on a tonnage basis between the types, one must know something of the supply of raw materials from which they are derived. It is not possible or desirable, here, to more than highlight the

developments to date, so that a foundation may be laid for further study. To do this, it is necessary to strengthen the base first by defining exactly what is meant by a "synthetic detergent" and a "surface active agent," and, secondly, to classify them for subsequent discussion.

A surface active agent has the property of orienting itself between two interfaces in such a way that it becomes a coupling agent bringing the interfaces into more intimate contact. The interface may be between liquid and gas, such as water and air, in which case a foaming agent results. Or, the interfaces may be solid and liquid, such as between water and glass. The ability of the water to spread on the glass is a measure of its spreading coefficient. This property is useful in the dispersion of solids in a liquid, such as carbon black in oil. The ability to cause a liquid to wet a solid may be very selective at times, wetting one material in preference to another. Advantage is taken of this characteristic in ore flotation. In most cases, however, the wetting may be quite non-selective. Under those conditions, the function of the agent

is described as wetting and penetrating. When the two interfaces are immiscible liquids, the surface active agent lowers the interfacial tension so that emulsions are formed and the agent is characterized as an emulsifier. If the surface active agent combines both wetting and emulsifying powers to a sufficient degree, and has a few other characteristics which are too complicated for easy definition here, the agent is called a detergent. Thus, it may be seen that a detergent is only a surface active agent which functions in a special manner.

Soap is a surface active agent exhibiting detergency to such a high degree that it is frequently used as a reference standard for judging this quality in other compounds. The sodium salt of lauryl sulfate and dodecylbenzene sulfonate also are detergents of high quality. These last two, however, differ from soap in several important respects. They are resistant to decomposition in mild acid solution and their lime and magnesium salts are sufficiently soluble to prevent precipitation in normally hard water. The term "synthetic detergent" has through long use

come to be associated with compounds which exhibit these two properties. For the purposes of this discussion, soaps will be excluded, even though in the strict sense, they are also surface active and are frequently used for the purpose of illustrating theories on surface activity.

Although synthetic detergents are merely a sub-class of surface active agents, they are of such commercial importance that they completely overshadow the parent class. From the viewpoint of tonnage this is particularly evident. It is estimated that synthetic detergents probably represent six to seven pounds out of every ten pounds of surface active agents produced. From the point of view of trade name products available on the market, however, probably not one out of seven has detergent powers, and of these, probably five chemical types represent 90 per cent of the bulk market;—namely, the alkyl aryl sulfonates, alkyl sulfates and sulfonates, sulfonated amides and the sulfonated monoglycerides. Of these five types, over one-half belongs to the class, alkyl aryl sulfonates. Of the balance, it is estimated that 2 to 3 lbs. out of ten are primarily wetting agents. The other one pound in ten, represents emulsifiers and germicidal agents.

This broad classification serves another useful purpose by indicating a chemical division useful in simplifying our thinking on the subject. For example, the detergent and wetting class of compounds is drawn largely from the anionic class of compounds, or those which ionize in water like a soap.

SoapR-COO⁻ Na⁺
Alkyl sulfate.....ROSO₃⁻ Na⁺

So many of these compounds are the sulfonates or sulfates that they are sometimes classified under that heading alone.

The emulsifiers for the most part are non-ionic and do not ionize in water. A typical example is the ethylene oxide condensate of an alkyl phenol ("Igepal CA") or the ester of a fatty acid, such as glycerol monostearate, etc.

Ester RCOOR⁺

The third classification is cationic agents, in which the ions reverse those of soap and are sometimes called "invert soaps." For example:

Soap RCOO⁻ Na⁺
Sapamine
SO₃ = (CH₂)₃CCH₂CH₂NHCO-R⁺

To this group belong the bulk of the sanitizing and bactericidal agents, and a few detergent and wetting agents. Probably 75 per cent of this class may be described as quaternary ammonium salts of which the compound, alkyl dimethyl benzyl ammonium chloride bulks large.

Classification of surface active agents as anionic, nonionic and cationic—is subject to some criticism due to overlapping. Some nonionics are also good detergents and some anionics are useful emulsifiers.

The historical development of each of these classes is of some interest.

The nonionics, developed first in the form of sulfonated oils, reach back over one hundred years. They were not developed further until the middle nineteen thirties when German research brought forth "Igepal CA," a detergent with certain unique properties in its textile application. Production of this type of fat free detergent was stimulated by the desire on the part of the German government to make that country self sustaining in its economy.

The anionic class is most commonly considered as beginning the modern era of synthetic detergents. Here, again, it is necessary to go back over half a century to the discovery that cetyl alcohol from sperm oil, could be sulfonated to make a detergent. The source of raw material prohibited any large scale production until the middle twenties in Germany, when high pressure hydrogenation of fat or oil with a copper-chromium oxide catalyst made production of the alcohols feasible. It was another ten years before the products, and later the methods, became available in America. First introduced by National Aniline and later by the Gardinol Corp., they became standard articles in the textile trade. Procter & Gamble Co., a co-owner with E. I. du Pont de Nemours & Co. of the Gardinol Corp., in the early thirties developed a synthetic detergent for the retail market called "Dreft," which is the oldest synthetic detergent on the American retail market.

In the meanwhile, another important detergent type was born in Germany due to the exigencies of World War I: the sulfonated naphthalene now known as "Nekal BX." This product is considered now only as a wetting agent, but to the research that it stimulated, can be traced the present large family of alkyl aryl sulfonates. The oldest American product of this type is National Aniline's "Nacconol." A few others are "Santomer," "Oronite," "Ultrawet," etc.

Still another development which emanated from Germany in the early twenties, was the sulfonation of the substituted amides, the best known being "Igepon T." This product was rapidly absorbed into various industrial processes in the thirties. Its excellence is unquestioned but the cost of manufacturing it and the type of raw materials required, have priced it out of the American retail field. Another important class of compounds developed, are the sulfated esters. Although fat derived like "Igepon," they were simpler to manufacture. Toward the end of the thirties their use as a retail product under the trade name of "Vel," was established along with the alcohol sulfate Dreft.

In America, during World War II, soap was never in such short supply as in Germany, and synthetics, although in constant demand, never reached much beyond the meagre supplies demanded by the army and navy requirements. Another limiting factor was the nominal raw material allocation. Certain cheap substitutes appeared on the retail market which consisted chiefly of soda ash. At the end of the war, these substitutes disappeared

quickly as the public demanded quality products.

In Germany, during the last war, necessity dictated rigid control of all soap and synthetic detergents. The processing of Fischer-Tropsch paraffin was extensively carried out as was also the Oxo process for the conversion of olefines to alcohols. This was originally developed by Americans (J. Amer. Chem. Soc. V52, 3221). The Mersolate process, another American development (Reed, U. S. Pat. 2,046,000) was also very extensively developed. BIOS report No. 11 estimates that half of the production was of this type. The product was inferior by all American standards, and is not to be compared to the similar American product "MP-189." Doubtless the lack of proper raw materials was the cause in part.

At the end of World War II, many of the factories in Germany were either in ruins or immobilized through lack of raw materials, personnel, etc., and the industry was at a standstill. There has been a gradual re-building on a very moderate scale during the past four years. What the future holds is a matter of conjecture. In England, the position is very much the same. Products suffer from lack of proper raw materials and plant facilities. In America, the lifting of ceiling prices on fats and oils, together with the serious shortage of fats in Europe caused fat and oil prices to triple as compared with their war and pre-war levels. Soap prices advanced correspondingly. In the spring of 1946 for example, 88 per cent tallow chip soap was selling at over 25c per pound in bulk and being sold on a voluntary ration basis. During the summer of the same year, retail packaged soaps were in shorter supply than at any time during the war period, and the housewife in many large urban areas was allowed only one package with her order when it could be found on the grocer's shelves. Coupled with this, was the fact that many large chemical plants producing war materials were now looking for peacetime outlets for their products. This combination of circumstances led to the phenomenal growth of the detergent industry. The period 1945 to 1948 saw practically every producing plant enter into a large scale expansion program. In addition, many newcomers entered the field. From a total of about 350 million pounds of 35 per cent active base material produced in 1944, production rose to an estimated 800 million pounds in 1948. A large part, if not all the increase in production has been due to the phenomenal growth of retail sales. An estimated breakdown from 1945 through 1948 follows:

Estimate of Retail versus Industrial Sales (in millions of lbs.) 35% active.				
	1945	1946	1947	1948
Retail	150	260	350	450
Industrial ...	250	300	350	350
Total ...	400	560	700	800

In 1940, only two nationally advertised brands were sold on the retail mar-

ket. By 1947, products had so multiplied that a list of 80 synthetic detergents sold at retail was prepared, which was by no means exhaustive. The majority were located in the midwest, where hard water conditions prevail. A study of available market surveys revealed that the majority of the products were of local importance only. A reasonable estimate would show that probably six brands controlled 90 per cent of the sales total, and most of these were in the hands of the large soap companies, which either made the entire product within the confines of their own plant; purchased a semi-raw material from an outside source and completed the manufacture; or contracted for the entire production to be manufactured by others. This position, taken by the soap industry may have been a surprise to those who thought such type production would be diversified among the more specialized synthetic organic manufacturers. However, it should be noted that the soap industry pioneered the introduction of such products. In addition the soap companies had the packaging, advertising and merchandising know-how. Furthermore, they had developed contracts with specialized organic firms to assure themselves of a ready supply of proper raw materials which could be processed without undue complication. Quite properly, the soap industry has taken the attitude that cleaning is its business, whether it is done with soaps or with synthetic detergents. Small soap makers are also synthetic minded and many are engaged in making products for their local areas. A number of companies who do not make soap are also in this field. At the present time the total share of the retail market for these latter groups is small, and possibly represents less than 10 per cent of the total.

THE past several years have witnessed three important developments in the synthetic detergent field. First, the introduction of heavy duty type synthetics, carrying such builders as the poly and pyrophosphates. These detergents compare in use with the heavy duty soap powders. Second is the use of sodium carboxy methyl cellulose, particularly with the alkyl aryl sulfonates, to improve their detergency with cotton, etc. The third development is the increased use of alkyl aryl sulfonates in place of the higher priced fat bearing materials such as the sulfated monoglycerides and the sulfated alcohols, a change undoubtedly promoted by the use of CMC. It is the author's opinion that an eventual balance will be maintained between the use of alkyl aryl sulfonates and other fat based detergents, depending on the relative price of each. Finally, retail synthetic detergents have become firmly established as a necessity in the American home, as both heavy duty and light duty cleaners. Established through the joint sponsorship of the synthetic chemical and soap industries, their safety is assured under any type of economic strain that appears likely to occur. That the present climb of sales volume may level off is quite possible. That it has

reached a saturation point is considered highly improbable. Synthetics utilize the latest types of fillers, which bring them within striking distance of the soaps as fabric cleaners, and make them superior to soap as light duty products. Synthetic detergents are attractively packaged, free flowing, dust free and odorless, equal to the best in soap bead production.

On the industrial side, production has grown with the industry and is controlled by a small number of well advertised brands. The backbone of the industrial manufacturer centers around long established chemical companies, specializing in the more complicated reactions of the process and frequently having contact with the consuming industry in other capacities. The industrial field is more open to competition, mainly because there are more large chemical concerns than there are large soap manufacturers. The patent situation is particularly confusing, and manufacturers have been cautious about pressing infringement claims lest they themselves get into difficulty. A number of trends in manufacture have been apparent: One is improved quality by introducing special purifying steps in the process, either for the raw materials or the finished product. There is a tendency to describe products accurately and to admit shortcomings. As far as type of product is concerned, the tendency is toward extended use of alkyl aryl sulfonates.

THE manufacture of this type anionic separates itself into two steps: (1) the preparation of the alkyl aryl, and (2) sulfonation. The first step does not lend itself to the type of operation usually associated with a soap plant and is best carried out by synthetic organic chemical firms and petroleum companies experienced in fractionations and condensations. The second step (sulfonation) is simple in many ways and quite adaptable to small scale production, either continuous or batch. Many soap companies have experience along these lines, particularly those which are sulfonating oils for the textile trade. For this reason, some chemical companies have specialized in producing an alkyl aryl suitable for sulfonation by the smaller companies. Such combinations are not uncommon at the present time. In some cases the sulfonation step is carried one step further by the prime manufacturers of the alkyl aryl. In it by sulfonating and purifying the material they pass the resultant slurry to the soaper for his own formulation and spray drying. This has certain advantages in procuring quality. Expensive solvent extraction and steam distillation plants are difficult to handle except by highly skilled personnel and are not flexible enough for a manufacturer who makes synthetics as a side line to his soap.

Another discernible trend is the increased use of non-ionics both fat and non-fat derived, which are being used in both industrial and retail outlets. The low foaming products have a detergent value proved beyond any reasonable doubt; a fact which has forced considerable revision of the thinking on the part of soap

makers in recent years. Being liquid, they are expensive to package. When blended with powders they prove rather sticky. To date such products have not been very acceptable to the retail trade. Small amounts added to anionic products such as the alkyl aryls are said to greatly improve overall detergency, but much work still remains to be done to prove this point beyond reasonable doubt. The general method of manufacture is by the addition of ethylene oxide to phenols, alcohols, fatty or rosin acids, etc. Tall oil, which is a mixture of approximately 50/50 rosin and fatty acids, lends itself readily to the production of a cheap product.

PROBABLY the most important development in the nonionic field over the past two years is the inroad they have made into the industrial detergent field such as commercial laundries. Progress has also been made in marketing them as light duty liquid cleaners. Nonionics also have been incorporated into soap bars with some apparent success. However, this field has not developed to a point where it is possible to estimate any definite trend. The industrial expansion of the nonionics has been steady and may be expected to increase. However, it is subject also to considerable uncertainty. Uses which appear minor today, may prove very important tomorrow. One use arousing considerable interest is the incorporation of such products into bread. Although the actual percentage used would be small, bread tonnage is such as to make an attractive market. Another use, to improve the wetting of stone by asphalt in wet weather has possibilities. It is estimated that not over 2 per cent of the total market at present is tapped.

In regard to cationics, the tendency has been to divide them sharply into detergents for special textile and other uses, and germicidal agents which, in general, comprise the quaternary ammonium salts. Although these latter do lower surface tension and act as wetting agents to some extent, it is considered more desirable to add additional non-ionics to them to increase their detergent qualities where such addition is useful in the application desired. The principal products on the American market at present have been reviewed and brought up to date.

The introduction of new compounds over the past two years has been remarkable. It is difficult to estimate just how many new products have been brought out, and how many were left off the previous list by accident. The list has grown from about 450 compounds to nearly 750. Of this, at least 75 to 100 have been dropped from the previous list because they were discontinued by the manufacturer. This represents a net gain of about 100 per cent. A few foreign products have been included along with some of the present discontinued American ones, so that the references to such products in the literature can be checked more easily. Sometimes, too, a good deal of time is wasted in looking for the manufacturer of a product that has already been discontinued.

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Acco Emulsifier #5	Amalgamated Chemical Corp.	Polyethylene glycol ester of fatty acids	Emulsifier	Paste	100%	nonionic	Emulsifier for cosmetic use.
Acidol 25A	Onyx Oil and Chemical Co.	Salt of a fatty acid tertiary amine	Wetting			anionic	Textile processing, carbonizing wool, electroplating.
Acidolate	Rare Chemicals, Inc., Subsidiary of Nopco Chem. Co.	Sulfonated oils, etc.	Detergent	Liquid		anionic	A non-irritating hypoallergenic skin detergent. Ideal cleanser for ringworm of the scalp; acne vulgaris, etc.
Acumul*	Glyco Products Co.						
Activol	Burkart-Schier Chem. Co.	Alkyl aryl sulfonate	Detergent Wetting	Powder		anionic	Textiles.
Acto 450, 500, 600, 630 and 700	Esso Standard Oil Co.	Alkyl aryl sulfonate Mol. Wt. 465-480	Emulsifying	Paste Liquid	70% 45%	anionic	A sod. sulfonate mineral oil mixture. % active is designated by first two numbers of code. Soluble oil for rust inhibitors, cutting oils, fat splitting, etc.
Advawet 33	Advance Solvents	Polyglycol ester	Wetting Emulsifying	Liquid	100%	nonionic	Developed for emulsion paints.
Advawet NA-6	Advance Solvents	Polyglycol ester	Emulsifying Wetting	Liquid		nonionic	Water soluble. Soluble in most organic solvents. Textile wetting-out, metal cutting compounds.
Aerosol AS	American Cyanamid Co.	Isopropyl naphthalene sod. sulfonate	Wetting Emulsifying	Liquid		anionic	Water soluble.
Aerosol AY	American Cyanamid Co.	Diamyl ester of sulfosuccinic acid $C_{12}H_{25}COOCH_2CHSO_3NaCOOC_2H_5$	Wetting Dispersing	Solid	100%	anionic	Pellet form, water soluble, best with electrolytes.
Aerosol IB	American Cyanamid Co.	Diisobutyl sod. sulfo succinate	Wetting Dispersing	Liquid	100%	cationic	Pellet form. Best of Aerosols for wetting in presence of high electrolyte.
Aerosol M	American Cyanamid Co.	Myristo amido propyl dimethyl benzyl Germicide ammonium chloride $C_{12}H_{25}CONH(CH_2)_8N(Cl)(CH_3)_2(CH_2CH_3)_2$	Germicide	Solid	100%	anionic	Sanitizer. pH of 1% sol. 8.2. Phenol Coeff. on S.A. at 37°C., 400-800.
Aerosol MA	American Cyanamid Co.	Dihexyl ester of sod. sulfosuccinic acid	Wetting Dispersing	Solid	100%	anionic	Wax like solid. Hydroscopic. Less soluble than Aerosol OT. Foaming poor. Use: Dry cleaning, etc.
Aerosol OS	American Cyanamid Co.	Isopropyl naphthalene sod. sulfonate	Wetting	Powder	95%	anionic	Hydroscopic
Aerosol OT	American Cyanamid Co.	Diethyl ester of sod. sulfosuccinic acid	Wetting Dispersing	Solid	100%	anionic	Wax like, hydroscopic solid, water soluble to form gel. at 50%. Best wetting agent of series but least stable. Also available as an 85% active paste, as a 70% water-solvent solution, as a 25% gel. in water and a 25% clear water-solvent solution.
Aerosol 18	American Cyanamid Co.	N-octa decyl disodium sulfo succinamate	Detergent	Paste	35%	anionic	Mainly a detergent in contrast to other Aerosols except —22 below.
Aerosol 22	American Cyanamid Co.	N-octa decyl tetrasodium (1,2-dicarboxyl ethyl sulfosuccinamate)	Detergent Wetting	Solid	95%	anionic	Granular yellow solid. Similar to Aerosol 18 in detergency.
Acto (German)		Ethylene oxide fatty alcohol condensate	Detergent	Liquid		nonionic	A series of alcohol ET O condensates. Compare to Brij 30.
Aframine DCA*	M. Michel & Co.						Product continued as Michelene DCA.
Afracal	Aframine Corp.	Alkyl aryl sulfonate	Detergent	Powder	45%	anionic	Textiles, general cleanser.
Agent S-439*	Glyco Products Co.						Discontinued.
Ahcowet ANS	Arnold, Hoffman & Co.	Sod. alkyl naphthalene sulfonate	Wetting	Liquid	55%	anionic	Textile, leather, etc.
Ahcowet LR	Arnold, Hoffman & Co.		Wetting	Liquid		anionic	A wetting and softening agent for leather.
Ahcowet N	Arnold, Hoffman & Co.		Wetting	Liquid	25%	nonionic	Will withstand 2% alkali or acid.
Ahcowet RS	Arnold, Hoffman & Co.	Sulfated fatty acid ester	Wetting Dispersing	Liquid	65%	anionic	Water soluble. Soluble in kerosene and chlorinated hchs. Dispersible in benzene. Textiles, dye baths, suniforizing, etc.

* Discontinued

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Albatex PO	Ciba Co	Benzimidazol compound	Dispersing Emulsifying	Powder		anionic	Imported. To be made in U. S. shortly.
Aldo 33	Glyco Products Co.	Glycerol monostearate	Emulsifying	Powder	100%	nonionic	Edible, used in baking, ice cream, cosmetics.
Aliphatic ester sulfate	Onyx Oil & Chem. Co.	As given in name	Wetting Emulsifying			anionic	Textile finishing and processing; pigment dispersion and dye levelling.
Alipal D (German)						nonionic	A series of alkyl phenols condensed with 3-4 moles of ethylene oxide and sulfated.
Alkamine SJ	Amalgamated Chem. Corp.	Sulfated fatty amine	Detergent	Paste	42%	anionic	Textile processing.
Alkanol B	E. I. du Pont de Nemours & Co.	Sod. alkyl naphthalene sulfonate	Wetting Dispersing	Powder		anionic	Textiles, metal cleaning.
Alipon (German)							A series of Igepon type compounds Alipon CA = Igepon A from CNO, Alipon CT = Igepon T from CNO or PKO, Alipon OAM = Igepon A from synthetic fatty acids.
Alkanol SA	E. I. du Pont de Nemours & Co.	Sod. alkyl naphthalene sulfonate	Wetting Dispersing	Powder		anionic	Soluble in water, alcohol and acetone. Wetting efficiency good.
Alkanol S Flakes	E. I. du Pont de Nemours & Co.	Sod. tetrahydronaphthalene sulfonate	Dispersing Solubilizing	Flake		anionic	Increases solubility of many synthetic detergents. See also xylene sulfonate.
Alkanol WXN	E. I. du Pont de Nemours & Co.	Sod. alkyl sulfonate	Wetting Rewetting Penetrating	Liquid		anionic	Most efficient of du Pont wetting agents except Duponol ME dry.
Alkaterge C.O.OX	Commercial Solvents Corp.	A substituted oxazoline	Wetting Emulsifying	Liquid	100%	cationic	1% in mineral oil lowers interfacial tension against water more than 95%. Textiles, lubricating oils, paints. Alkaterge -O is a more highly refined grade of Alkaterge C. Alkaterge -OX is less highly refined.
All (retail)	Detergents, Inc. (Mfg. by Monsanto Co.)	Compound containing Sterox as active ingredient.	Detergent	Powder		nonionic	A product designed for automatic washers. Gives low foam value with good detergency.
Alox Series	Alox Corp.	Complex methyl esters of high mol. wt., acids, and lactones. Also the amine salts of long chain acids, and sulfonates of long chain alcohols.	Wetting Emulsifying				Lubricating, and for enhancing wetting properties of oils and displacing water in control of metal corrosion.
Alro Amines C.O.S.	Alro Chem. Co.	Heterocyclic tertiary amine	Detergent Wetting Germicide	Solid	100%	cationic	The alkyl group may possibly be derived from coconut oil (c) red oil (o) or tallow (s). With alkyl halides they yield quaternary amm. salts. See also Amine 226, Nopogen 20-0 and Ethomeen. Sanitizing detergent in acid sol., paint dispersant, textile softening agent.
		$\text{CH}_3-(\text{CH}_2)_n-\text{C} \begin{array}{l} \nearrow \text{N}-\text{CH}_2 \\ \searrow \text{N}-\text{CH}_2 \\ \quad \quad \quad \text{R} \end{array}$					
Alrolenes	Alro Chem. Co.	Ammonium salts of alkyl aryl sulfonates, etc.	Emulsifier	Paste	100%		Available in laboratory quantities.
Alrogel	Alro Chem. Co.	Fatty amide sulfate	Detergent	Liquid	17%	anionic	Textile scouring agent, thickener in presence of electrolyte.
Alromine G-50 (G-25)	Alro Chem. Co.	Fatty alkylol amine condensate	Emulsifier	Paste	50%	cationic	pH of 1% sol. at 25°C-5.5. Also available as Alromine G-25 a 25% active solution. Anionic substantive textile softener.
Alromine K	Alro Chem. Co.	A blended compound of anionic substantive softener and detergent.	Wetting Penetrant	Paste	21%	anionic	Textile finishing agent.
Alromine RA	Alro Chem. Co.	Fatty alkylol amine condensate	Emulsifier	Paste	25%	anionic	Cosmetics, as hair conditioner, shampoos, softening agent.

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Alromine RA-53	Alrose Chem. Co.	Fatty alkylol amine condensate	Emulsifier	Paste	53%	cationic	Cationic substantive textile softener.
Alromine S-50 (S-25)	Alrose Chem. Co.	Fatty alkylol amine condensate	Emulsifier	Paste	50%	anionic	Anionic substantive textile softener. Also available as Alromine-S-25 at 25% active. pH of 1% sol. 8.8.
Alronol-90AC	Alrose Chem. Co.	Fatty alkylol amine condensate	Wetting	Liquid		nonionic	An acidified form of Alrosol and used primarily as a rewetting agent.
Alropon 30	Alrose Chem. Co.	Salt of a secondary alcohol sulfate	Detergent	Paste	65%	anionic	Wool scouring, cream shampoo. Optimum detergency at 50°C. Moderately resistant to hard water. Alropon 30 is a 30% active form.
Alrosene 15W	Alrose Chem. Co.	Salt of a secondary alcohol sulfate	Detergent	Liquid	17%	anionic	Diluted form of Alrosene NA
Alrosene 23L	Alrose Chem. Co.	Sod. salt of a modified alcohol sulfate	Detergent	Liquid	31%	anionic	Designed for textile use with strong alkalis.
Alrosene 31	Alrose Chem. Co.	Sod. salt of a modified alcohol sulfate from coconut fatty acids	Detergent	Powder	31%	anionic	Household and textile detergent. Not acid or alkali stable in any concentrated form over any period of time.
Alrosene NA*, K*	Alrose Chem. Co.						Alrosene K was the Potassium salt of Alrosene NA. Both discontinued.
Alrosene NC	Alrose Chem. Co.	Sod. salt of a modified alcohol sulfate	Detergent	Paste	17½%	anionic	Textile.
Alrosene PD	Alrose Chem. Co.	Sod. salt of a modified alcohol sulfate	Detergent	Powder	15%	anionic	Same as Alrosene 31.
Alrosept	Alrose Chem. Co.	Quaternary ammonium compounds	Germicide	Liquid	25%	cationic	A generic term applying to quaternary ammonium compounds with high germicidal activity only.
Alrosept MB	Alrose Chem. Co.	Alkyl hydroxyethyl imidazolinium chloride	Germicide	Solid	100%	cationic	Pure M.P. 90°C. Phenol coeff. against E. typhosa minimum 400. A sanitizing agent.
Alrosol	Alrose Chem. Co.	Fatty alkylol amine condensate	Detergent	Liquid	87%	nonionic	Thickener, wetting agent, lubricant.
Alrosol C	Alrose Chem. Co.	Fatty alkylol amine condensate	Detergent	Liquid	100%	nonionic	As for Alrosol with superior lathering and lime resistance. Hair conditioning agent, shampoo.
Alrosol H	Alrose Chem. Co.	Fatty alkylol amine condensate	Detergent	Liquid	87%	nonionic	Same as Alrosol, modified to give increased viscosity at 5-15% concentration.
Alrosol O	Alrose Chem. Co.	Fatty alkylol amine condensate	Emulsifying	Paste	100%	nonionic	Nonionic emulsifier and dispersing agent. Poor dispersing.
Alrosol S	Alrose Chem. Co.	Fatty alkylol amine condensate	Emulsifying	Solid	100%	nonionic	Wax solid, dispersant, thickener stabilizer.
Alroterge	Alrose Chem. Co.	Sod. alkyl naphthalene sulfonate	Detergent	Flake	35%	anionic	General purpose industrial detergent.
Alroterge T	Alrose Chem. Co.	Amine alkyl benzene sulfonate	Detergent	Liquid	50%	anionic	Cosmetic preparations, liquid household cleaners.
Alro Water Softener	Alrose Chem. Co.						Renamed Sequestrene A.
Alrowet 12	Alrose Chem. Co.	Sod. salt of a secondary C ₁₂ alcohol sulfate	Wetting	Liquid	50%	nonionic	An acid and alkali stable nonfoaming wetting agent. Very stable to electrolyte. Uses: Alkali cleaners, cold wave solutions, electroplating.
Ameco 198A	Ameco Chemicals	C ₁₂ to C ₁₈ alkyl sulfate	Detergent	Liquid	30%	anionic	Use: Textile, leather, cosmetics, paints.
Amerse (retail)	Vestal, Inc.	Quaternary ammonium salt	Germicide	Solid	30%	cationic	Tablet form for easy dispensing. Also available in liquid form. General sanitizing solutions. Sold through wholesalers.
Amine 220	Carbide & Carbon Chem. Corp.	A condensation of an oleic acid and aminoethylaniline $\begin{array}{c} \text{R}-\text{C}-\text{N}-\text{CH}_2\text{CH}_2\text{OH} \\ || \\ \text{N}-\text{CH}_2-\text{CH}_3 \end{array}$	Detergent		100%	cationic	See U. S. Pat. 2,267,965. Cationic, emulsifier for dilute acids for agricultural sprays. Anti corrosive and lubricating value. See also Alroamine and Nopcoogen 20-0.

* Discontinued

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Amine ES	Carbide & Carbon Chem. Corp.	The ester of a stearic acid and diethanolamine $R-COOCH_2CH_2-N(C_2H_5)_2$	Emulsifying	Liquid	100%	cationic	Cationic emulsifier under acid conditions. Useful with waxes.
Amine O, C, S	Alrose Chem. Co.	Heterocyclic tertiary amine	Emulsifier		100%	cationic	Same as Alro Amine.
Antarane T-120	Gen. Aniline & Film Corp.	Sulfonated aliphatic polyester	Wetting	Liquid	22%	anionic	pH of 1% sol. 5.5-7.0. Water soluble. Strong wetting and rewetting agent in neutral systems. Insecticidal spreading agent, wall paper removal, compounds, etc.
Antaron L-135, (L-114)	Gen. Aniline & Film Corp.	Oleyl sod. methyl taurate	Detergent Wetting Dispersing	Powder	31.5%	anionic	Similar to Igepon T and Arctic Syntex T. Stable to acids, alkali and hypochlorite solns. Antarox-L-114 is a 16% active paste form. Uses: metal cleaning, cosmetics, dishwashing compounds, laundry, etc.
Antaron L-215	Gen. Aniline & Film Corp.	Sod. palmitoyl methytaurate	Detergent	Powder	16%	anionic	Decomposes above 115°C. Uses: textiles.
Antaron L-245	Gen. Aniline & Film Corp.	Sod. palmitoyl methytaurate	Detergent Wetting	Powder	48%	anionic	Somewhat similar to Igepon 702K (German). pH of 1% sol. 7.0-7.5. Antarox L-135 is more soluble. Uses: metal cleaning, laundry, dishwashing, insecticide dispersant, etc.
Antaron L-511	Gen. Aniline & Film Corp.	Built Antaron L-520	Detergent	Liquid		anionic	Non-foaming. Uses: spray cleaning operations on metal, glass, etc. Prevents film build-up in hard water.
Antaron L-520	Gen. Aniline & Film Corp.	Alkyl amide sulfonate	Detergent Wetter Dispersant	Gel	28%	anionic	Non-foaming. Possesses surface adsorption characteristics.
Antaron N-185	Gen. Aniline & Film Corp.	Sod. oleyl isethionate	Detergent Wetting	Powder	85%	anionic	Less stable than Antaron L-135 in acid and alkali. Otherwise similar.
Antaron R-155	Gen. Aniline & Film Corp.	Sod. alkyl naphthalene sulfonate	Wetting Emulsifying	Powder	70%	anionic	An acid and alkali stable wetting agent. Uses: rubber polymerization, paint dispersant, in printing inks.
Antaron R-275	Gen. Aniline & Film Corp.	Sod. alkyl naphthalene sulfonate	Detergent Wetting	Powder	70%	anionic	Antaron 275 is a 66-69% active base material.
Antarox A-200, A-180, A-201, A-400, A-480	Gen. Aniline & Film Corp.	Alkyl aryl polyethylene glycol	Detergent Wetting Emulsifying Dispersing	Liquid	100%	nonionic	Acid, alkali, hard water stable. Available as an 82½% active water solution (Antarox A-180). Uses: general cleaner, insecticidal spray, wax emulsifier, fire extinguisher. Antarox A-201 is similar to A-200 but has higher solubility at elevated temperatures. Antarox A-400 and A-480 are deodorized A-200 and A-180, respectively.
Antarox B-100	Gen. Aniline & Film Corp.	Polyethylene glycol oleate	Emulsifier Dispersant	Liquid	100%	nonionic	Water dispersible, soluble in mineral oil, benzene, kerosene. Uses: lubricant additive, cosmetics, dry cleaning.
Antarox B-290	Gen. Aniline & Film Corp.	Polyethylene glycol ricinoleate	Emulsifier Dispersant	Liquid	97%	nonionic	Water soluble, mineral oil insoluble. Uses: paint and wax emulsifier. Excellent lime soap dispersant.
Antarox D-100	Gen. Aniline & Film Corp.	Polyethylene glycol oleyl ether	Emulsifier Dispersant	Paste	100%	nonionic	Soluble in water, benzene. Insoluble in kerosene. Emulsifier for waxes, rubber and paint dispersant, leather oils, etc.
Aquatargent (-W)	Aqua-Sec. Corp.	Sulfated boro fatty acid amide	Detergent				Textiles. (Aquatargent-W is a less concentrated solution.)
Arctic Syntex A High conc.	Colgate-Palmolive-Peet Co.	Sod. salt of a sulfated fatty ester $R-COOCH_2CH_2OSO_3Na$ possibly	Detergent	Powder	85%	anionic	See Igepon A (German). Detergency excellent. Not recommended with alkalis. Not stable to strong acid or alkali. Reg. powder 51% active.

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Arctic Syntax M	Colgate-Palmolive-Peet Co.	Sod. salt of a sulfated monoglyceride $R-COOCH_2CHOHCH_2OSO_3Na$	Detergent Emulsifier Wetting	Powder	31%	anionic	Not stable to strong alkali. Detergency excellent. Perfumed bead. Also available as an 85% active (Arctic Syntax M Extra concentrated).
Arctic Syntax M-Liquid	Colgate-Palmolive-Peet Co.	Ammonium salt of a sulfated monoglyceride	Detergent Emulsifier Wetting	Liquid	36%	anionic	An alcohol-water solution. pH of 0.25% soln. —5.8. Uses: Shampoos, etc.
Arctic Syntax T-Pdr. (Gel.) (High Concn.)	Colgate-Palmolive-Peet Co.	Sod. oleyl methyltaurate	Detergent Emulsifier Wetting	Powder	33%	anionic	Hydroscopic. Similar to Igepon T (German) and Antaron L-135. Excellent detergent in acid, alkali and hard water. More stable than Arctic Syntax A or M. Also available as a 76% conc. powder and as a 16% aqueous gel.
Areskap 100	Monsanto Chem. Co.	Monobutylphenyl-phenol sod. monosulfonate $C_4H_9(SO_3Na)C_6H_4-C_6H_4(OH)$	Wetting	Powder	100%	anionic	More polar solvent than Aresket and Aresklene series. Uses: Insecticides, embalming fluids. See also Beaconol M.
Areskap 50	Monsanto Chem. Co.		Wetting	Liquid	50%	anionic	A 50% aqueous soln. of Areskap 100.
Aresket 300	Monsanto Chem. Co.	Monobutyl biphenyl sod. monosulfonate	Wetting	Powder	100%	anionic	Less polar solvent than Areskap-100. Wetting properties best under alkaline conditions. Uses: insecticidal sprays, etc.
Aresket 240	Monsanto Chem. Co.		Wetting	Liquid	40%	anionic	A 40% aqueous solution of Aresket 300.
Aresklene 400	Monsanto Chem. Co.	Dibutylphenyl phenol sod. disulfonate	Wetting Emulsifying	Powder	100%	anionic	Dry hydroscopic powder, decomposes above 160°C. Water and polar solvent solubility good. Principal use as a wetting agent in the application of rubber to fabric.
Aresklene 375	Monsanto Chem. Co.		Wetting	Paste	75%	anionic	A 75% aqueous solution of Aresklene 400.
Arlacel 20, 40, 60, 80 & 85	Atlas Powder Co.	Sorbitan monolaurate, (20) monopalmitate (40) mono stearate (60) mono-oleate (80) and trioleate (85)	Emulsifier		100%	nonionic	Cosmetic grade of the corresponding Span compounds.
Arlacel 83	Atlas Powder Co.	Sorbitan sesquioleate	Emulsifier	Liquid	100%	nonionic	Cosmetic grade of Arlacel C.
Arlacel A	Atlas Powder Co.	Mannide monooleate	Emulsifier	Liquid	100%	nonionic	Cosmetics. Useful where electrolyte is present.
Arlacel B	Atlas Powder Co.	Mannitan monooleate	Emulsifier	Liquid	100%	nonionic	Stable in pH range of 0.5-12.0. Cosmetics as water in oil emulsifier.
Arlacel C	Atlas Powder Co.	Sorbitan sesquioleate	Emulsifier	Liquid	100%	nonionic	Neutral emulsion characteristics excellent. Uses: Drugs, cosmetics. Resembles Spans in solubility characteristics.
Armeen 2C, 2HT	Armour & Co.	Secondary fatty acid amine	Emulsifier Raw material for emulsifiers	Solid	90%	cationic	Secondary amines of fatty acids. Uses: lubricants, rust inhibitors, oil soluble quaternaries. See Arquad 2C and 2TH.
Arquad-12, -14, -16, -18, T, SC	Armour & Co.	Quaternary ammonium compounds of the form. $R-N(CH_3)_3Cl$	Germicide Wetting Detergent	Liquid and Paste	33%	cationic	Number refers to carbon atoms in chain (over 90%). T, to tallow. C to Coconut fatty acids and S to Soy bean fatty acids. Surface tension data low. Uses: Germicidal cleaners, air conditioning, ore flotation, textile treating.
Arquad 2C, 2HT	Armour & Co.	Quaternary ammonium compounds of the form. $RR'-N-(CH_3)_3Cl$	Emulsifier		75%	cationic	Oil soluble quaternary for textile lubrication, softening, mold inhibiting, etc. 2C is CNO derived, 2HT probably from hardened tallow.
Arylene	Hart Products	Sod. alkyl aryl sulfonate	Detergent	Liquid		anionic	Textiles.
Aurinol D	Onyx Oil & Chem. Co.	Sulfated fatty alcohol blend	Detergent	Liquid		anionic	Textile processing, scouring and dyeing.
Avasol 14, 153A	Aframene Corp.		Emulsifier	Liquid		cationic	Emulsifier for insecticidal sprays. Aerosol 153A designed for DDT and chlordane.

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Avitex AD	E. I. du Pont de Nemours & Co.	Sulfated alcohol derivative	Dispersant	Liquid		anionic	Textile processing; dyeing assistant.
Avitex C	E. I. du Pont de Nemours & Co.	Modified alcohol sulfate	Softener	Paste		anionic	Textile and paper softening and lubricating agent.
Avitex R	E. I. du Pont de Nemours & Co.	Alkyl amine derivative	Softener	Paste		cationic	Antistatic agent for textiles, etc.
Avitex SF	E. I. du Pont de Nemours & Co.	Sod. alcohol sulfate	Wetting	Paste		anionic	Finishing agent for textiles.
Avitex W	E. I. du Pont de Nemours & Co.	Sod. alcohol sulfate	Wetting Penetrant			anionic	Finishing agent for textiles.
Avitone A	E. I. du Pont de Nemours & Co.	Alkyl sulfonate	Softener	Paste		anionic	Textile; carding, spinning and fulling, also as paper and leather lubricating agent.
Azocel B	Synthetic Chemicals		Wetting Penetrant	Liquid		nonionic A	solubilizing agent for developed and acid dyes.
Base 401M	E. F. Drew & Co.	Poly oxyalkylene esters and sulfonates	Emulsifier	Liquid	100%	nonionic	Insecticide emulsifier for DDT, toxaphene, chlordane, etc.
Beaconol A*	Beacon Co.						
Beaconol M	Beacon Co.	Pot. salt of monoethyl phenyl monosulfonate	Wetting Dispersing			anionic	Compare also to Areskap 100. Uses: Textile, leather, paints.
Beaconol S	Beacon Co.	Ammonium salt of monoethyl phenyl phenol monosulfonate	Wetting Dispersing			anionic	Textile, leather, paper, paint, etc.
Beaconol T	Beacon Co.	Guanidine salt of monoethyl phenyl phenol monosulfonate	Wetting Dispersing			anionic	Dispersing agent for pigments in inks, paints, etc.
Bemul	Beacon Co.	Glycerol monostearate	Emulsifier	Powder	100%	nonionic	Water dispersible; used in cosmetics, shortening, lubricating oils. See also Tegin, etc.
Benzene Sod. Sul- fonate	Wyandotte Chemicals Corp.	As in name	Wetting Hydrotropic	Powder	95%	anionic	A solubilizing agent.
Betramine	Aframine Corp.	Sulfated alkylol amide	Detergent	Powder	25%	anionic	Textiles, general cleanser.
Betanol 152, 401, 520, 540, 550, 564, 701	Beacon Co.	High molecular weight esters	Emulsifying Wetting			nonionic	Not acid or alkali stable. Uses: cosmetics, pharmaceuticals, paints, etc. —564 is an acid stable hydroxy ester for shampoos.
Betasol	American Cyanamid Co.						Name given Aerosols when sold to leather trade.
Betasol OT-A	American Cyanamid Co.	Sulfonated ester of dicarboxylic acid	Wetting	Liquid	25%	anionic	
Bionol A	General Dyestuff Corp.	Alkyl dimethyl benzyl ammonium chloride	Germicide	Liquid	25%	cationic	A bactericidal and sterilizing agent of high germicidal potency.
Bionol EC Powder	General Dyestuff Corp.	Cetyl dimethyl ethyl ammonium bromide	Germicide	Powder	100%	cationic	A bactericidal and sterilizing agent of high germicidal potency.
Bionol ST Powder	General Dyestuff Corp.	Alkyl quaternary ammonium bromide	Germicide	Powder	100%	cationic	A bactericidal and sterilizing agent of high germicidal potency.
Biopal G	General Dyestuff Corp.	Quaternary germicidal detergent	Detergent Germicide	Liquid	31%	cationic	A sterilizing detergent of high germicidal potency.
Blendene	Glyco Products	Terpene fatty acid salt complex	Emulsifying Dispersing	Liquid	100%	anionic	Nontoxic oil in water emulsifier for oils and solvents.
Bozetol	Hart Products Corp.	Sulfated ester	Wetting	Liquid		nonionic	Non-sudsing textile wetting out agent.
Breeze (retail)	Lever Bros. Co.	Sod. salt of a fatty acid ester of a sul-Detergent foacetamide plus builders		Powder		anionic	Retail light duty detergent.
Bretol	Fine Organics, Inc.	Cetyl dimethyl ethyl ammonium bromide	Germicide	Solid		cationic	A sanitizer. See also Ethyl Cetab.
Brij-35	Atlas Powder Co.	Polyoxyethylene lauryl alcohol	Emulsifier	Solid	100%	nonionic	A water soluble wax like compound. Oil in water emulsifier, particularly with alkali. Not recommended for food uses.
Brij-30	Atlas Powder Co.	Polyoxyethylene lauryl alcohol	Emulsifier	Liquid	100%	nonionic	Ethylene oxide increased to yield liquid. Water dispersible, oil soluble.
Bromat	Fine Organics, Inc.	Cetyl trimethyl ammonium bromide	Germicide	Powder	100%	cationic	A sanitizing agent.

* Discontinued

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
BTC	Onyx Oil & Chemical Co.	Alkyl dimethylbenzyl ammonium chloride	Germicide	Liquid	50%	cationic	A 50% aqueous solution. Phenol coeff. on S.A. not less than 200. Product mfg. for use in Detergent Sanitizer Conc.
Burk-Schlier XXT*	Burkart-Schlier Chem. Co.						
Caramide	Carlstadt Chem.	A sulfated amide	Detergent	Paste	33%	anionic	Excellent fine foam. Textile, laundry, etc.
Catalytic Agent C, D*	Victor Chem. Works						Renamed Victamine C, D which see.
Cationsan	Onyx Oil & Chem. Co.	Complex amido condensation product	Detergent	Paste		cationic	Designed for paper and cloth impregnation.
Cationsan T	Onyx Oil & Chem. Co.	Mixture of a complex amide condensation product and a quaternary amon. Germicide compound	Detergent	Paste		cationic	Sanitizer for medical and dental personnel equipment.
Catylon C, D	Hart Products Corp.	A salt of a tertiary amine	Emulsifier Bactericide	Liquid		cationic	An acid scouring and wetting out agent.
Cee Dee	Fairfield Laboratories	Alkyl dimethyl benzyl ammonium chloride	Germicide	Powder	20%	cationic	A water soluble sanitizing agent for food processing equipment. 80% inert water soluble filler.
Cerfak	E. F. Houghton & Co.	Sod. alkyl aryl sulfonate	Detergent	Flake	40%	anionic	Textile. Moderately soluble in water, acetone, etc.
Cerfak Liquid	E. F. Houghton & Co.	Sulfonated fatty amide plus alkyl aryl sulfonate	Detergent Wetting	Liquid	30%	anionic	pH of 1% soln. 7 - 1. An oil in water emulsifier. Use: textiles.
Cerfak 1300	E. F. Houghton & Co.	Alkyl poly oxyethylene alcohol	Detergent Wetting	Liquid	85%	nonionic	Water soluble in all proportions. Insoluble in kerosene or mineral oil. Use: Textiles, all operations.
Cerfak 1301	E. F. Houghton & Co.	Alkyl poly oxyethylene alcohol, modified	Detergent Penetrant	Liquid	93%	nonionic	Not quite as good a wetting agent as Cerfak 1300. Otherwise similar in use.
Cerfak N-100	E. F. Houghton & Co.	Poly ethanalamine condensate of a fatty acid	Detergent Wetting	Liquid	100%	nonionic	Stable to acids and alkalis and to hard water. Textile scouring and dyeing, etc.
Cetab	Rhodes Chemical Co.	Cetyl trimethyl ammonium bromide $C_{18}H_{39}N(CH_3)_3Br$	Germicide	Powder	100%	cationic	A pharmaceutical product for sanitizing solutions. Water solubility at 20°C. is 0.5% at 30°C. it is 40%.
Cetac*	Rhodes Chemical Co.	Cetyl trimethyl ammonium chloride	Germicide	Solid	96%	cationic	Crystalline powder. Mol. wt. 319.5. Very much more soluble than Cetab. Uses: Sanitizing solutions such as mouth washes, dishwashing, etc.
Cetol	Fine Organics, Inc.	Cetyl dimethyl benzyl amm. chloride	Germicide	Solid	100%	cationic	Phenol coeff. at 20°C. on S. A. 400
Cetylon	Rhodes Chemical Co.	Cetyl dimethyl benzyl amm. chloride	Germicide	Solid	92%	cationic	White crystalline solid. See also Rodalon, and Octab. This compound has properties between above. See also Cetol above. Compound contains 2 moles of water of hydration. Very soluble in water, benzene, glycol, etc. Phenol coeff. on S.A. at 37°C -225-275.
Charlab Condensate	Charlotte Chemical Laboratories		Wetting				Textiles.
Clearate	W. A. Cleary Corp.	Soya lecithin	Emulsifying Dispersing	Liquid Paste		nonionic	An anti-oxidant, also as emulsifier and dispersant in inks, cosmetics, etc.
Clearax	Miranol Chemical Co.	Sulfonated fatty acid amide	Detergent	Paste	55%	anionic	A shampoo base material.
Chat. (retail)	General Aniline & Film Corp.	Similar to Antaron L-511	Detergent	Liquid		anionic	An automatic dishwashing compound.

* Discontinued

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Chlorisol	E. F. Drew & Co.	Polyoxyalkylene ester	Emulsifier	Liquid		nonionic	A chlordane emulsifier. See also Emcol H-72 for same purpose.
Cominol	Commonwealth Color & Chem. Co.	Salt of a sulfonated fatty amide	Detergent		30%	anionic	A refined form of Soapotol.
Creolite-NC	Perkins Soap Co.	Compound of surface active agent in a Wetting Detergent	Detergent	Liquid		anionic	Textile.
Cyclanon (German)		Alcohol sulfate	Detergent				German generic name, comparable to Duponol and Orvus. Cyclanon LA-lorol sulfate, Cyclanon O-oleyl sulfate, etc.
Cyclopion A Extra General Dyestuff Corp.		$C_{18}H_{37}CO_2N(CH_3)C_6H_5SO_3Na$	Detergent	Powder	50%	anionic	Decomposes above 115°C. Use: textiles. Stable to hard water acid and alkali.
Cymene Sod. Sul- Wyandotte Chemicals Corp.		As name implies	Hydrotrope Wetting	Powder	96%	anionic	pH of 1% soln. 6.1. A 30% water soln. has a pH of 8.4. A solubilizing agent see also Xylene sod. sulfonate.
D-40, -60*	Oronite Chem. Co.						See Detergent D-40.
D-Spers-O	Planetary Chem. Co.	Condensation product of a polyglycol, fatty acid and sod. sulfosuccinic acid	Emulsifier	Liquid	100%	nonionic	An emulsifier for DDT, and other chlorinated insecticides.
D-Spers-O, AC	Planetary Chem. Co.	Condensation product of a polyglycol, fatty acid and sod. sulfosuccinic acid	Emulsifier	Liquid	100%	nonionic	More acid and hard water resistant than D-Spers O. Use: Agricultural sprays for chlordane, etc.
D-Spers-O, W, PS, MO, CI	Planetary Chem. Co.	Condensation product of a polyglycol, fatty acid and sod. sulfosuccinate acid	Emulsifier	Liquid	100%	nonionic	A series of emulsifiers of varying solubility properties. —W is water soluble, PS, petroleum solvent soluble. Mo-mineral oil sol. Chlorinated solvent soluble. Insecticide sprays, dry cleaning, etc.
Darvan No. 1	R. T. Vanderbilt Co. (Mfg. by Dewey & Almy)	Sod. salt of polymerized alkyl aryl sulfonic acid (alkyl, short chain) (Probably a formaldehyde condensation)	Sul-Dispersing	Powder	100%	anionic	Soluble in water up to 40%. pH of 1% sol. 7-9.5. Uses: dispersant for latex, carbon black, whitening, clay, etc. Compare also Daxad #11.
Darvan No. 2	R. T. Vanderbilt Co. (Mfg. by Dewey & Almy)	Sod. salt of polymerized alkyl aryl sulfonic acid (alkyl, long chain)	Sul-Dispersing	Powder	100%	anionic	Max. water solubility—25%. An emulsion stabilizer. Dispersant for latex, paper, leather, etc. Compare also Darvan #1.
Daxad No. 11	Dewey & Almy Chemical Co.	Polymerized sod. salts of alkyl naphthalene sulfonic acid (alkyl, short chain)	Dispersing	Powder	77%	anionic	Maximum solubility in water is 40%. Oil in water emulsifier. Dispersing agent for latex, paper, leather, etc. Compare also Darvan #1.
Daxad No. 21	Dewey & Almy Chemical Co.	Mono calcium salt of a polymerized dispersing alkyl aryl sulfonic acid (alkyl, long chain)	Dispersing	Powder	75%	anionic	Water solubility approx. 25% at 70°F. Insoluble in mineral oils, alcohol, kerosene, etc. Dispersant for solids in water, as calcium salts in mfg. of wallboard, etc.
Daxad No. 23	Dewey & Almy Chemical Co.	Polymerized sod. salts of substituted benzoid alkyl sulfonic acid, alkyl-long chain)	Dispersant	Powder	85%	anionic	Water soluble. An emulsion stabilizer against acids, alkalis and temperature change. Dispersant for paper, textile and mining industry. Compare also to Darvan #2.
Daxad No. 27	Dewey & Almy Chemical Co.	Polymerized sod. salt of a substituted benzoid alkyl sulfonic acids combined with an inert inorganic suspending agent	Dispersing	Powder	88%	anionic	Uses: Dispersant and emulsifier for agricultural sprays.
Decab	Rhodes Chem. Co.	Octadecenyl - 9, dimethyl benzyl, ammonium chloride (Mol. Wt. 417)	Germicide	Liquid	99%	cationic	Similar to Octab. Alkyl group derived from oleic acid. Water and benzene soluble, phenol coeff. at 37°C. against S.A.-175-200. Uses: algicide, deodorant, sanitizer, etc.
Decersol OT	American Cyanamid Co.	Diethyl ester of sodium sulfo succinic acid	Wetting	Liquid	25%	anionic	Name used in textile trade for Aerosol. See Aerosol OT, 25% aqueous.

* Discontinued

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Dergon OM	Arkansas Co.	Amino fatty ester	Detergent	Liquid	95%	nonionic	Textile, leather.
Dermolan L (German)		Ammonium salt of benzidine di sulfonic acid condensation product					
Dermolate	Rare Chem. Inc. (Subsidiary Nopco Chem Co.)	High molecular wt. sat. fatty acids et al	Detergent	Solid		anionic	A non irritating hypo-allergenic lathering skin detergent in cake form.
Detanol	Commonwealth Color & Chem. Co.	Sod. salt of an alkyl sulfonate	Detergent Wetting		18%	anionic	Textile.
Detergent D-40, D-60	Oronite Chemical Co.	Alkyl aryl sod. sulfonate	Detergent	Powder	40%	anionic	General industrial and household cleaning agent. D-60 is a 60% drum dried product.
Detergent I-160	Alrose Chemical Co.	Modified cationic agent	Emulsifying Detergent	Liquid	85%	cationic	Oil soluble. Used in dry cleaning.
Detergent Ho (German) (N, K)							A generic name for a mixed class of products. Detergent Ho 153 is a dodecyl, phenyl ethylene oxide condensate while Detergent Ho 1/181 is an alkyl aryl sulfonate and detergent N & NK are alkyl sulfates.
Detergent -M, D	Ciba Co.	Amino condensation product	Detergent	Solid	10%	anionic	Water soluble, pH of 1% solution at 25°C—8.5. (—D) is similar only in more concentrated form.
Detergent MXP	Monsanto Chemical Co.	A built powder containing Sterox CD	Detergent	Powder		nonionic	A compound non sudsing detergent of the "ALL" type. Stable to strong alkali but salted out by such. Uses: intermediate, textiles.
Detergent Sanitizer Conc.	Onxy Oil & Chemical Co.	Mixture of BTC—100% and Neutronyx 600, Ratio 1:2 and 1:1	Germicide Detergent	Liquid	100%	cationic	Product contains cationic germicide with non-ionic wetting agent. Use: Sanitizing detergent.
Detergent Slurry	Oronite Chemical Co.	Alkyl aryl sod. sulfonate	Detergent	Slurry	33%	anionic	A slurry for spray-drying purposes.
Detergent 31	Lehigh Chem. & Export Co.	Modified alcohol sulfate	Detergent	Powder	31%	anionic	Compare to RN—31 also.
Detergent 35	Lehigh Chemical & Export Co.	Sod. salt of an alkyl aryl sulfonate	Detergent Wetting	Flake	35%	anionic	Compare also to RN—35. Use: textiles.
Detergent 77	Peck's Products Co.		Detergent	Liquid		nonionic	General household and industrial cleaner.
Detergent 85	Lehigh Chemical & Export Co.	Sod. salt of an alkyl aryl sulfonate	Detergent	Powder	85%	anionic	General detergent. Used in industrial and household cleaner, textiles, etc.
Detergent 240	Arnold, Hoffman & Co.	Alkyl naphthalene sod. sulfonate plus additive	Emulsifying Detergent	Flake Powder	30%	anionic	Wetting fair, emulsifying excellent.
Detergent T-12	Victor Chem. Works	Organic phosphate plus builder	Detergent	Powder		anionic	Non-foaming for automatic dishwashers.
Detergol 1426	L. Sonneborn Sons, Inc.		Detergent	Liquid	100%		
Dianol ANC	Quaker Chem. Prods. Corp.	Alkyl aryl sulfonate	Detergent Wetting	Liquid	30%	anionic	Textile uses.
Dianol ANS	Quaker Chem. Prods. Corp.	Alkyl aryl sulfonate	Detergent Wetting	Paste	43%	anionic	Textile uses.
Dianol ANX	Quaker Chem. Prods. Corp.	Alkyl aryl sulfonate	Detergent Wetting	Flakes	40%	anionic	Textile and general purpose uses.
Dianol N	Quaker Chem. Prods. Corp.	Fatty amide sulfate	Detergent	Liquid	30%	anionic	Neutral detergent for textile and general uses.
Dianol S	Quaker Chem. Prods. Corp.	Fatty amide sulfate	Detergent	Paste	24%	anionic	Textile and general industrial detergents.
Dianol G	Quaker Chem. Prods. Corp.	Fatty amide condensate	Detergent Wetting	Liquid	98%	nonionic	Industrial cleaning agent.
Dianol 11	Quaker Chem. Prods. Corp.	Alkyl aryl sulfonate	Detergent Wetting	Liquid	45%	anionic	Textile uses.
Dianol 20	Quaker Chem. Prods. Corp.	Ester sulfate	Detergent Wetting	Liquid	65%	anionic	Textile uses.
Dichloran	Fine Organics, Inc.	Alkyl dimethyl 3,4 dichlorobenzyl ammonium chloride	Germicide	Liquid	100%	cationic	Bactericide and sanitizing agent.
Diglycol—laurate oleate stearate	Glyco Products Co. Kessler Chem. Co., etc.	As named	Emulsifier		100%	nonionic	Laurate, water insoluble, stearate, is water dispersible. Uses: General water in oil emulsifier for cosmetics, foods, etc.

Synthetic Detergents . . .

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Dilex	Warwick Chemical Co.	Purified sulfonlinin	Dispersing				A latex dispersing agent.
Dipex*	Stanco, Inc.						
Dismulgan (German)							A generic term which like most German products is applied to various types. Thus Dismulgan II is a castor oil ethylene oxide condensate. Dismulgan III is a similar condensate with dodecyl phenol. Dismulgan VII is di (2-ethyl hexyl) sulfosuccinate, (compare Aerosol MA).
Dreft (retail)	Procter and Gamble Co.		Detergent	Solid		anionic	Dishes and fine fabric detergent.
Drench*	Arnold Hoffman & Co.						Discontinued.
Drene (retail)	Procter and Gamble Co.		Detergent	Liquid		anionic	Hair shampoo.
Duofol L	Hart Products Co.	Highly sulfonated ester	Penetrant Wetting	Liquid	60%	anionic	pH of 1% soln. at 25°C. 6.5. Drave's sinking time 0.1% soln. -15 sec. Uses: Textiles, wetting out, sanforizing.
Duponol C	E. I. du Pont de Nemours & Co.	Sod. lauryl sulfate	Detergent	Powder		anionic	Meet specification of U.S.P. XIII.
Duponol D Paste	E. I. du Pont de Nemours & Co.	Sod. sulfated mixed alcohol	Detergent	Paste		anionic	A paste for general heavy duty detergent use.
Duponol G	E. I. du Pont de Nemours & Co.	Higher alcohol sulfate	Emulsifying	Paste		anionic	
Duponol LS	E. I. du Pont de Nemours & Co.	Tech. oleyl sulfate	Detergent	Paste		anionic	Scouring agent. Comes also in flake form, Duponol LS Flakes.
Duponol ME dry	E. I. du Pont de Nemours & Co.	Technical sod. lauryl sulfate	Detergent Dispersing Emulsifying	Powder		anionic	Wetting properties very efficient. Detergency excellent.
Duponol OS	E. I. du Pont de Nemours & Co.	Higher alcohol sulfate	Emulsifying				Emulsifying agent for O/W emulsions.
Duponol WA Paste (WA Flakes)	E. I. du Pont de Nemours & Co.	Alcohol sulfate	Detergent Wetting Dispersing	Paste		anionic	Comes in flake form also. More water-soluble than Duponol D and lathers better in cold water.
Duponol WAT	E. I. du Pont de Nemours & Co.	Triethanolamine salt of alcohol sulfates	Detergent	Liquid		anionic	Similar to Duponol WA except neutralized with triethanolamine. Uses: Cosmetics, shampoos.
Duponol WS	E. I. du Pont de Nemours & Co.	Higher alcohol derivative	Emulsifying			anionic	Emulsifying agent.
Duponol -80	E. I. du Pont de Nemours & Co.	Sod. alcohol sulfate	Emulsifying Dispersant	Liquid		anionic	Very soluble. Used in electroplating baths, tanning of leather, textiles, etc.
Dynesol K 50	Amalgamated Chemical Corp.	Sodium salt of sulfonated mono and di amyl naphthalene	Penetrant Wetting	Liquid	35%	anionic	Oil in water emulsifier. Textiles.
E-607	Emulsol Corp.	Quaternary ammonium compound	Germicide	Powder	100%	cationic	The active ingredient in Emulsept and sold to manufacturers only.
Emargol	Emulsol Corp.	Fatty acid ester	Emulsifier			nonionic	An anti spattering agent for margarine, shortening, etc.
Emcol 14	Emulsol Corp.	Polyglyceride ester of a fatty acid	Emulsified			nonionic	An antifoaming agent for baking, etc.
Emcol 888	Emulsol Corp.	Polyalkylnaphthalene methyl pyridinium chloride	Germicide	Liquid	40%	cationic	For use in sanitizing solutions. Phenol Coeff. against S.A. at 20°C. 780.
Emcol 4150	Emulsol Corp.	Complex fatty acid derivative of aliphatic sulfonate	Detergent Wetting	Liquid	35%	anionic	Completely water soluble. For cosmetics, textiles.
Emcol 5100	Emulsol Corp.	Alkanolamine fatty acid condensate	Detergent Wetting	Liquid	90%	nonionic	Solution becomes viscous with addition of water. Thickening agent, emulsifier, etc.
Emcol H-47	Emulsol Corp.	Fatty acid condensation product of a polyhydric alcohol	Emulsifier	Liquid	100%	nonionic	An oil in water emulsifier for agricultural sprays, particularly for DDT. Recommended concentration 5%. Soluble in benzene, xylene, turpentine. Insoluble in white mineral oil, kerosene.
Emcol H-50A	Emulsol Corp.	Fatty acid condensation product of a polyhydric alcohol	Emulsifier	Liquid	100%	nonionic	An oil in water emulsifier embracing the solubility of both Emcol H-47 and Emcol H-50. Use for DDT sprays in al'phatic solvents.

* Discontinued

TURNER

WETTING AGENTS

ANIONIC

(For Copious Suds)

TYPE: ALKYL ARYL SULFONATE

FORMS: FLAKE, GROUND
LIQUIDS and POWDER

ACTIVE ORGANIC: 40%-50%-70%

NON-IONIC

(For Controlled Suds)

TYPE: POLYOXYETHYLENE

FORM: LIQUID

ACTIVE ORGANIC: 100%

TURNER Detergents are characterized by rapid solubility, clarity of solution and desired absence of turbidity.

Dry forms are white in color. Hence they blend (hide) better in your finished product.

Liquid concentrates are amine neutralized and completely salt free. No filtration required.

Powdered material is remarkably free from objectionable dust.

Headquarters for Dispersing,
Foaming, Spreading and Wetting
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Sapolio New Morgan Name

Sapolio Products Co., is the name of Enoch Morgan's Sons Co., New York, one of the oldest soap and cleanser manufacturers in the United States. According to an announcement from the company, "Mr. John W. Morgan, president of Enoch Morgan's Sons Co., since 1925, and grandson of Enoch Morgan, will operate it under the title, Sapolio Products Co. He has taken over the going business as part of his share of the assets which are being divided among stockholders."

Enoch Morgan's Sons Co., was founded in New York in 1809. Its best known product is Sapolio, a cake and powdered scouring agent, which has been manufactured and distributed in all parts of the world for the past eighty years. During the early 1900s, Sapolio was famous for its "Spotless Town" advertising which attracted world-wide attention. The company has always been located in New York during its 140 year history, its present address being 439 West Street.

Benson in New Shulton Post

David Benson, for the past year assistant manager of the Atlantic territory of Shulton, Inc., New York, was recently appointed manager of a newly created sales division to be known as the "Metropolitan Territory." The new territory includes New York City, Long Island, Westchester County, and the State of New Jersey. Mr. Benson has been with Shulton for 10 years in the capacity of sales representative. He now heads an expanded sales force to cover all drug and department stores in the newly created sales area.

Brown Fels Sales Head

The appointment of Arthur A. Strumwasser as manager of the Eastern division of Fels & Co., Philadelphia, was announced recently. He was formerly assistant manager of the divi-

sion under Max Brown, who has been named general sales manager with



ARTHUR A. STRUMWASSER

headquarters in Philadelphia. Mr. Brown fills the vacancy left by the late John F. Keegan. Mr. Strumwasser will make his headquarters in New York. He has been with the firm for 21 years.

Flick Retires from Armour

Daniel M. Flick, vice president of Armour & Co., in charge of the Armour Auxiliaries, retired July 1, after 33 years of service. He had entered the company's employ in 1916 and for years had been assistant superintendent in the soap manufacturing division.

Louis E. McCauley, vice president in charge of the Armour research and development laboratories, also retired July 1, after 51 years of service, which he started in 1898 as a clerk in the St. Paul, Minn., branch office.

Conklin Joins Antara

Joseph E. Conklin, formerly with Francis I. du Pont & Co., New York, recently joined Antara Products, General Aniline & Film Corp., New York, as a sales representative. He will handle sales of "Chat," liquid detergent for machine dish washing.

AASGP Membership Rule

Broadening of its membership to include manufacturers of synthetic detergents and synthetic glycerine was voted at a recent meeting of the board of directors of the Association of America Soap & Glycerine Producers. In announcing the action of the board, Roy W. Peet, manager of the A.A.S.G.P., pointed out that the association was set up to promote soap and kindred products and a large number of its members are now marketing synthetic detergents as well as soap. "The inclusion of synthetic detergent manufacturers should do much to advance the work of cleanliness education undertaken by the association," he said.

New Werk Detergent

A new detergent, "Disho," was introduced recently in Dayton and Cleveland by M. Werk Co., Cincinnati. The product, whose name stems from a soap discontinued by the Werk company about 20 years ago, will be introduced shortly in Cincinnati and Richmond, Va. The new detergent is a light duty synthetic. It is priced to compete with such products as "Vel" (Colgate-Palmolive-Peet Co.) and "Dreft" (Procter & Gamble Co.).

Bryan Rejoins Gillam

Claude E. Bryan, former salesman for Gillam Soap Works, Fort Worth, Tex., who retired to go in business for himself, recently rejoined the firm. He has sold his business and will again call on laundries of the Southwest representing Gillam.

P. & G. Dividend

Directors of the Procter & Gamble Co., Cincinnati, recently declared the regular quarterly dividend of \$2 per share on the 8 per cent preferred stock, payable July 15 to holders of record June 24.

Soap Prices Reduced

Soap price cuts ranging from about four to nine per cent were announced recently by Procter & Gamble Co., Cincinnati; Lever Brothers Co., Cambridge, Mass. and Colgate-Palmolive-Peet Co., Jersey City, N. J. Reductions were also made on shortenings produced by the three firms. Lever lowered wholesale prices from four to nine per cent on "Swan," "Lifebuoy," "Rinso," "Silver Dust," "Lux Flakes," all soap products, and on "Breeze and "Surf," synthetic detergents. Procter & Gamble announced wholesale price reductions of approximately five per cent on its soap products, while similar cut in wholesale prices of household soaps was made by Colgate-Palmolive-Peet.

Among the larger grocery chain stores who announced retail price reductions on soaps, following the announcement by the manufacturers, were the A. & P., which cut the price of many brands of soap flakes and powders one cent a package, bath soap one cent a bar and toilet soap two-thirds of a cent a cake. Grand Union Co., lowered prices on 20 soap package items by one cent and Bohack stores announced that it would reduce soap prices.

H. F. Brehm Dies

Herman F. Brehm, 87, retired soap manufacturer, died June 29, at his home in Waterloo, N. Y. He was widely known as a historian for Seneca County, N. Y.

P&G Security Plan

A profit sharing plan for employees was recently introduced at the Hamilton, Ont., plant of Procter & Gamble Co. of Canada, Ltd. The plan is designed to help employees attain financial security by the time they retire and also increases their credits in proportion to any rise in company profits. It is anticipated that an annuity return of as high as 40 per cent of his average annual remuneration will be produced for an employee. The company is currently sponsoring a pension scheme, for which it bears the cost, to provide maximum pensions of \$75 per month for men and \$60 for

The Shulton "Early American Old Spice" Vanity, at right, includes a cake of bath soap, dusting powder and toilet water. The lid holds a mirror. The set retails for \$5.



women. This provision is now supplemented by setting aside in a trust fund a share of the company's annual earnings which will be used to provide profit sharing credits to all employees.

Texo Corp. Elects Sway

Election of Boris Sway as president of Texo Corp., Evanston, O., was announced following the annual organization meeting of directors. He has been vice president in charge of production since the firm's inception several years ago.

Mr. Sway has played an important role in research and development of detergents. Prior to his association with Texo, he was consultant for two companies which also specialized in production of surface active chemicals for maintenance. He was graduated from the University of Cincinnati.

Don Bertke was elected vice president of the firm at the board meeting, at which Jack DeBord, assistant treasurer, reported sales increased more than 27 per cent during the last fiscal year. It was also revealed the company is planning to introduce several new products.

Republicans Take Young

Howard Young, vice-president of the Davies-Young Soap Company, Dayton, Ohio, has been elected chairman of the Republican County Committee for Montgomery County, Ohio.

Political feuds have been reported rife in Montgomery County, one of Ohio's political hot spots, and Mr. Young was chosen chairman to smooth out differences. He is the son of Fred Young, board chairman of Davies-Young, and is a former member of the board of the National Sanitary Supply Association.

E. W. Freundt Dies

Edward W. Freundt, manager of the chemical division of Armour & Co., Chicago, died suddenly July 3, while vacationing in Seattle, Wash. Mr. Freundt, who was 47 years old, had been with the company for 22 years.

Discuss Detergent Problems

The influence of synthetic detergent pollution on water coagulation was the subject of a symposium and experience exchange conducted during the convention of the American Water Works Association in Chicago recently.

Producers of water softening and water purification chemicals were represented at the trade exhibition held in connection with the 69th annual gathering of water works engineers. Among them were Calgon, Inc., Culligan Zeolite Co., Dearborn Chemical Co., Industrial Chemical Sales div. of West Virginia Pulp & Paper Co., Mathieson Chemical Corp., Permutit Co., and Columbia Chemicals div. of Pittsburgh Plate Glass Co.

New Lever Brothers Coast Plant

AS PART of a \$55,000,000 program of expansion, ground was broken on July 20 in Los Angeles, Calif., for the construction of a new \$25,000,000 soap and food products plant for Lever Brothers Co., Cambridge, Mass. Representing the largest new industrial investment by private business in the history of Los Angeles County, the new plant is located on a 30-acre site eight miles from downtown Los Angeles at Anaheim-Telegraph Road and Washington Boulevard.

Charles Luckman, president of Lever Brothers Co., was in Los Angeles for the ground-breaking ceremonies, prior to which he spoke on faith in the economic future of America before the Los Angeles Chamber of Commerce. In his talk, Mr. Luckman cited four reasons why he feels the American economy is sound: 1.) 59 million workers employed; 2.) 200 billion dollars in liquid savings; 3.) 215-billion-dollar personal income for 1949; 4.) high purchasing power—53 per cent greater than pre-war. Through lack of faith in America and fear of the future we can talk ourselves into a depression, he stated. Mr. Luckman hailed the passing of the sellers' market, which he termed an "abomination" to business, but said that the return of the buyers' market is a challenge which "makes robust demands upon our sense of quality, our sense of service, our competitive instincts and sales talents." He declared that sales forces need "basic training in the most efficient, hard-

hitting methods of meeting today's changed conditions."

Mr. Luckman concluded by outlining his view of the role of business today: 1.) To lower prices wherever possible; 2.) to continue sound wage policies; 3.) To increase productivity in cooperation with labor; 4.) To develop new products, new methods, new services; 5.) To have an eagerness for enterprise, a willingness to expand and a revitalized initiative.

Following his address, Mr. Luckman, accompanied by Governor Earl Warren and other dignitaries and business leaders, proceeded to the site of the new plant for the ground-breaking ceremonies. Mr. Luckman said that the new plant will be the most modern one of its type in the world. In addition to the new \$25,000,000 Los Angeles plant, Lever Brothers will spend the remaining \$30,000,000 on a modernization and expansion program for its other plants in the United States.

The new Lever Los Angeles plant will have a strikingly modern exterior. On the grounds there will be a small lagoon, fountains and bronze figure. A four-story office building featuring wide expanses of windows will be located at the front of the property. Factory buildings characterized by few windows, located toward the tops of the structures will also be of modern design.

All Lever soap and synthetic detergent products, Pepsodent tooth paste, Harriet Hubbard Ayer cosmetic preparations, Rayve home permanent

and hair preparations, Luxor cosmetics, ammoniated tooth powder and edible products will be made at the new Los Angeles plant.

More than 600 persons will be employed at the new plant, which will handle raw materials and finished products at the rate of 180,000 tons a year.

Argentina Frees Soap

Price controls on soap were removed recently by Argentina. They had been in effect since 1943 on soap, edible oils and milk.

Swedish Detergent Plant

B. Bergstrom & Co., Stockholm, Sweden, recently announced that they are going to build a factory there for the production of the alkyl aryl sulfonate type detergent. The firm represents Oronite Chemical Co. for Scandinavia and previously imported Oronite's "D-40" detergent. However, because of the dollar shortage it has been decided to construct a plant for the manufacture of "D-40" from Oronite's "Alkane." Bergstrom & Co. also represent in Scandinavia Calgon, Inc., of Pittsburgh; Pennsylvania Salt Manufacturing Co., Philadelphia, and Pittsburgh Plate Glass Co., Pittsburgh.

Hilby Leaves Armour

Martin Hilby, assistant manager of the soap division of Armour & Co., Chicago, recently left that position to join Longstreet-Abbott & Co., St. Louis. He had been with Armour since 1941.

New Case for Detergent

"Electra-Sol" detergent for use in domestic dishwashing machines is now available in a case of 12, one-pound 10-ounce packages, it was announced recently by Economics Laboratory, Inc., St. Paul. Previously, the product was sold only in 24 package cases. The new case wholesales for \$2.80 and retails for \$4.68.

Signs with Union

North Coast Chemical and Soap Works, Seattle, recently signed a union label agreement with Local 186, Amalgamated Meat Cutters.

Architect's drawing of new Lever Los Angeles plant.





our odors
wouldn't
hurt a fly...

but they'll
cover up
for the killers!



We can't add to the killing power of your insecticides, but we can cover up
or replace their unpleasant odors with fragrances so clean, fresh, and
appealing that more people will want to use more of them. Givaudan offers a complete
line of skillfully blended perfume oils for insecticide odors, effective in small
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Climalene Buys Skidoo

Climalene Co. of Canton, O., recently announced that it had acquired the assets, inventories and good will of Skidoo Co. of Columbus, manufacturer of "Skidoo" household and hand cleaner for more than 25 years. In making the announcement, G. H. Deuble, president of Climalene stated that his company plans to continue making the product in Columbus for the present, but eventually will transfer operations to its Canton or Chicago plants.

W. H. Sheffield Dies

William H. Sheffield, president, manager and a director of Innis, Speiden & Co., New York, died at his summer home in Allenhurst, N. J., July 26, of a heart attack. He would have been 75 years old on Aug. 7. Mr. Sheffield was also president of Jensen Machinery Co., and vice-president and chairman of the executive committee of Flako Products Corp. He is survived by his widow, two sons, William H., Jr., and Halsey F. Sheffield, and a brother.

Craig Joins Wyandotte

Jack L. Craig recently joined the chemicals development department of Wyandotte Chemicals Corp., Wyandotte, Mich., as a technical field representative where he will specialize in the promotion of benzene sulfone derivatives, aromatic acids and chloroether type compounds. Following chemical engineering graduate work at the University of Colorado, Mr. Craig was associated for two years with E. I. du Pont de Nemours & Co., Wilmington.

New Atlas Department

Atlas Powder Co., Wilmington, Del., recently announced the combining of the functions and personnel of its development center, including its technical library, with those of the research department. The new department will be designated as the research and development department. K. R. Brown, director of the research department since 1940, and a member of the Atlas board of directors since 1947, is in charge of the new



Charles W. Frost, who last month joined the industrial chemicals sales division of Mathieson Chemical Corp., New York, was formerly a vice-president with Prior Chemical Corp., New York. He had been with Prior since 1930, having gone with that firm from Union Carbide & Carbon Corp. He was division sales manager at Prior before being elected a vice-president last year.

department. The organizational change was made coincident with the retirement of James T. Power, who has been director of the development department since 1947.

Hooker Names Spafford

Hooker Electrochemical Co., Niagara Falls, N. Y., announced recently the appointment of Allen L. Spafford as field salesman in the territory comprising upper New York state and western Pennsylvania. He has been associated with Hooker for two years as a process study engineer, and is a graduate of Cornell University, where he received a B. S. and a B. Chem. E. degree. He will make his headquarters at the Niagara Falls office of the company.

New D&O House Organ

The first issue of its new house organ, "D&O News," was issued recently by Dodge & Olcott, Inc., New York. A four-page, black and white, 8½ x 11 inch folder, it features a letter from Joseph Rudolph, president of Dodge & Olcott, announcing the new bi-monthly. In addition, there are articles on aerosol bombs, the Chinese raw material situation and another on the company's research program. Arthur Dowling, advertising director and assistant sales manager of D&O, is editor.

Two Men with P&G 50 Years

Diamond service pins were presented recently to two Procter & Gamble men on their completion of 50 years' employment with the company. Floyd M. Barnes, a vice-president and member of the board of directors, and William Peters, a millwright, both went to work for P&G in 1899 and have been with the company ever since. Mr. Barnes began his career as a clerk in the traffic department and has held positions in the traffic, cottonseed oil and general buying departments. He was named vice-president in 1931 and a member of the board in 1934.

Mr. Peters began as an employee of the concern's box factory, where he worked a 10 hour day six days a week for five cents an hour. He remained in that department 12 years, then accepted the company's offer to learn the millwright trade. He has been a millwright since, and worked in almost every department at the Ivorydale factory. In his entire 50 years with P&G, Mr. Peters has missed only four weeks of work.

Chi. Toiletries Show

The seventh annual trade show of the Chicago Associated Toiletries Salesmen will be held Aug. 28 to Sept. 2, at the Palmer House, Chicago, where the entire seventh floor has been reserved for a showing of the soaps and toiletries lines of 86 exhibitors. A banquet on Saturday evening, Aug. 27 for members and exhibitors will mark opening of the affair.

Chairman of the show committee is the association's vice president, A. H. Bergstrom of Tussy, Inc., and assisting him are J. J. Hannon of Houbigant, and W. R. Tenney of Lenthéric, Inc., Mr. Tenney is secretary-treasurer of the organization whose president is Dave Engel of Charles of the Ritz.

Elect W. E. Bittner

Election of W. E. Bittner as vice-president of purchases of Diamond Alkali Co., Cleveland, was announced recently by Raymond F. Evans, president. Mr. Bittner formerly was director of purchases for eight years.



FRITZSCHE



Est. 1871

Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and STOCKS: Atlanta, Ga., Boston, Mass., Chicago, Ill., Cincinnati, O., Cleveland, O., Dallas, Tex., Detroit, Mich., Los Angeles, Calif., Philadelphia, Pa., San Francisco, Calif., St. Louis, Mo., Toronto, Canada and Mexico, D. F.
FACTORY: Clifton, N. J.

There is not a soap product made whose sales will not respond to the subtle persuasion of a discreetly chosen fragrance. If you feel there is a lack of this powerful sales ingredient in any of your present products, it might well pay you to let our laboratory specialists venture a suggestion or two toward its improvement. And, of course, you will not be obligated unless you can see real possibility of benefit in our recommendations.

Fat, Oil Use in Soap Drops in 1st Quarter

CONSUMPTION of fats and oils for use in soap declined during the first quarter of 1949, as compared with the fourth quarter of 1948, according to figures recently released by the Bureau of the Census, U. S. Dept. of Commerce. In the first three months of this year fats and oils reported used for soap totaled 475,204,000 pounds, as compared with 489,229,000 pounds in the fourth quarter of 1948. The first quarter total was almost 95,000,000 below the figure for the first three months of 1948.

Consumption of inedible tallow, the leading soap fat, declined from 260,190,000 pounds in the final quarter of '48 to 228,861,000 pounds in 1949's first quarter. Grease use also was reported off, 112,121,000 pounds being used in the first quarter, as against 119,146,000 pounds in the fourth quarter of 1948. Coconut oil, the third most important soap fat was reported at 66,165,000 pounds for the quarter, as compared with 92,337,000 pounds in the fourth quarter, 1948. In the first quarter a year ago, 146,317,000 pounds of coconut oil were reported used for soap, while tallow consumption was put at 271,308,000 pounds. Grease use for soap in that period was 130,396,000 pounds. The next most important oil or fat for soap, and the only other single one

topping the ten million pound mark in the first 1949 quarter was babassu, totaling 15,993,000 pounds. In the final quarter of '48, 4,878,000 pounds were used, and in the first 1948 quarter, 1,655,000 pounds were reported consumed for soap use.

The figures in thousands of pounds for first quarter 1949 consumption of fats and oils follow:

KIND	Pounds
Cottonseed Oil (crude and refined)	236
Corn oil (crude)	25
Soybean oil (crude and refined)	694
Olive oil (inedible)	94
Olive oil (foots)	1,448
Palm oil (crude)	147
Coconut oil (crude and refined)	6,165
Palm kernel oil (crude)	64
Babassu oil (crude and refined)	15,993
Linseed oil (raw and refined)	47
Castor oil No. 1 (crude)	76
Castor oil No. 3 (crude)	113
Other vegetable oil (crude)	29
Total of vegetable oils not shown separately	44
Tallow, edible	1,012
Tallow, inedible	157,931
Tallow, inedible (refined)	70,930
Grease	112,121
Vegetable foots	18,344
Animal foots	7,212
Fish and marine mammal	34
Total of primary products other than vegetable oils not shown separately	303
Total of secondary products	22,145
Total	475,204

Aroscent to Dobbs Ferry

Aroscent, Inc., Brooklyn, subsidiary of Davis and Lawrence Co.,

Dobbs Ferry, N. Y., recently moved the Brooklyn office and laboratory to newly expanded manufacturing and operating facilities at Main and Chestnut Sts., Dobbs Ferry, N. Y. Davis and Lawrence Co. continue as export representative of Aroscent.

Hildreth New Solvay P.A.

E. Austin Barnes, purchasing agent for Solvay Process Division, Allied Chemical & Dye Corp., New York, retired from that position recently, after 59 years with the Solvay organization. K. E. Hildreth, formerly assistant to Mr. Barnes, is the new purchasing agent. He has been with the firm since 1917.

Mr. Barnes is a native of Syracuse. He first joined Solvay Co. in 1890 and worked intermittently while obtaining his education. He was graduated from Cornell University in 1899 as a mechanical engineer. In addition to working at the Solvay plant at Syracuse, Mr. Barnes has also supervised purchasing for the Solvay plants at Detroit and Baton Rouge.

Mr. Hildreth is a native of Flushing, New York. He was graduated from Cornell in 1912 as a mechanical engineer. After previous experience with Atlas Portland Cement Co. and Sement-Solvay Co., he joined Solvay Process Co. in 1927.

Packer Canada Rep.

Packer Machinery Corp., New York, recently announced the appointment of Cannery Machinery, Ltd., Simcoe, Canada, as its sales representative in Canada for all liquid filling equipment. J. B. Doyle is vice-president and general manager of Cannery's.

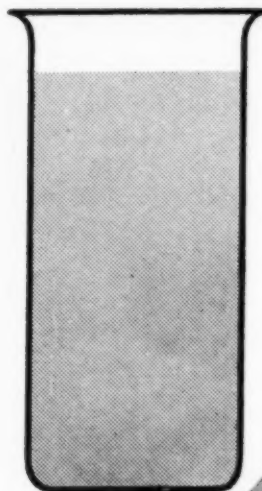
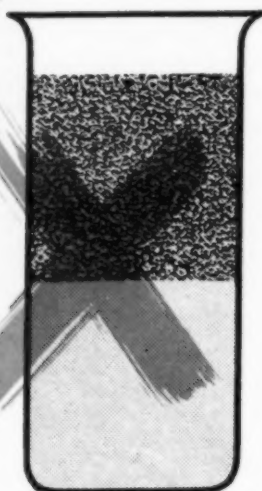
Lehmann Honors Employees

Three employees of J. M. Lehmann Co., Lyndhurst, N. J., recently were presented with gold watches upon completion of 30 years' employment with the firm at its 16th annual outing at Blasberg's Grove, Hawthorne, N. J. E. E. Mueser, president of Lehmann presented the watches to Karl Huber, Alfred Hollstein and Max Abriel. Silver and gold service pins were presented to 93 other employees for two or more years of service with the company.

E. E. Mueser, president of J. M. Lehmann Co., Lyndhurst, N. J., presenting gold watches to Max Abriel, Alfred Hollstein and Karl Huber, all 30-year employees of the firm.



NON-IONIC EMULSIFIERS



REPCOLENE K-50 100%

A coconut fatty amine condensate with non ionic properties in alkaline solution. Will improve the detergency of anion-active or cation-active compounds — 100% active — Very light in color.

REPCOLENE E-90

A coconut fatty acid amine condensate soluble in hydrocarbons and having excellent emulsifying properties.

Write for complete information sheets on these two unusually efficient products.



REFINED PRODUCTS CORPORATION

Manufacturing Chemists

624-634 SCHUYLER AVENUE • LYNDBURST, NEW JERSEY



Newly installed display and sales office of Anchor Hocking Glass Corp., Lancaster, O., at 2017 Philadelphia Savings Fund Building, Philadelphia, combine facilities for the sale and display of the company's complete line. Above is view of sales and display section for glass containers and plastic and metal closures.

C-P-P Income Up in Half

A rise in its net income for the first half of 1949, as compared with the first six months of 1948, was reported recently by Colgate-Palmolive-Peet Co., Jersey City, N. J. The firm had a net for the first half of this year of \$5,298,464, equal to \$2.54 a common share, against \$3,978,572, or \$1.86 for the comparable '48 period. The net income is after write-down of inventories and commitments to cost or market, whichever is lower and after provision for payments in connection with the reduction in the price of soap, announced earlier in the month. The reserve for inventory price decline was reduced \$900,000 through a transfer to earned surplus, leaving a balance in the reserve of \$2,100,000.

Colgate - Palmolive - Peet Co., had domestic net sales of \$103,640,582 in the first half of this year, as against sales of \$111,798,297 for the 1948 half, a decline reflecting price reductions. Income taxes in the 1949 period totaled \$2,827,417, as against \$1,939,041 for the '48 half. World wide sales for the first six months of 1949 were \$146,865,895, against \$151,957,927 for the comparable 1948 period.

In the first quarter of this year C-P-P reported a net income of \$3,529,888, equal to \$1.71 a common share, as compared with \$3,802,834

or \$1.85 a common share in the first quarter in 1948.

Snell Receives SOCI Medal

"Detergents and Detergency" were discussed in an address by Foster D. Snell of Foster D. Snell, Inc., New York, before the Society of Chemical Industry, meeting in Manchester, England, July 13. Dr. Snell received the Society's gold medal. It is awarded to the person "who has attained eminence in applied chemistry." Dr. Snell is the second American to have received it.

In his address, Dr. Snell described the relations between the chemical and physical properties of synthetic or natural compounds and their effectiveness as cleaning and washing agents in both household and industrial applications.

DCAT Awards Given Oct. 18

Former President Herbert Hoover and General George C. Marshall, former Chief of Staff and one-time Secretary of State have been chosen and will personally accept the "Distinguished Service Awards" at the "Business Speaks" dinner of the New York Board of Trade, to be held Tuesday evening, Oct. 18, in the grand ballroom of the Waldorf-Astoria Hotel, New York.

Boston BIMS Golf

Ed E. Aldrich of United Drug Co. was first prize winner at the second 1949 golf tournament held by the Boston BIMS at the Weston Golf Club, Weston, Mass., on July 27. Forty golfers played in a record high temperature and a dozen additional attended for dinner. W. E. Johnson, BIMS chairman, announced the prize winners as follows: 1st low net, Ed Aldrich; 2nd low net, M. E. Nourse of Howe & French, Inc.; 1st low net for guests, J. J. McCarthy, Monsanto Chemical Co.; 1st kickers, G. O. Lindberg, Monsanto Chemical Co.; 2nd kickers, W. E. Johnson, U. S. Industrial Chemicals, Inc.; 3rd kickers, H. C. Green, L. Sonneborn Sons. Door prizes were won by H. J. Hefernan of Monsanto and E. D. Bement of the B. B. Chemical Co. The final tournament and outing of 1949 will be held at the Nashua Country Club, Nashua, N. H. late in September.

Gillams to Europe

Ernest O. Gillam, president of the Gillam Soap Works, Fort Worth, Texas, accompanied by Mrs. Gillam, sailed for Europe on Aug. 4. The Texas "soap trust buster" fresh from testifying before a hearing of a Department of Agriculture sub-committee on the utilization of farm products in Washington during which he again attacked the "major soapers" as a monopoly, sailed on the *Queen Elizabeth* for a two-month stay abroad. He expects to visit soapers in England and on the Continent and to study European soap making operations.

Lever-Appliance Promotion

A sales campaign which provides that the 60,000 dealers of Westinghouse Electric Corp., New York, promote the sale of products of Lever Brothers Co., Cambridge, Mass., and arrange cooperative promotions with local grocers was announced recently. Under the provisions of the plan, housewives receive a \$2.00 certificate toward the purchase of any one specified appliance or radio in exchange for two wrappers or box tops from Lever products. Newspaper and magazine advertising will support the campaign.

Antara Products

General Aniline &
Film Corporation

Antara Extra

An Antara Products Publication

Detergents
Emulsifiers
Wetting Agents
Dispersants
Carbonyl Iron Powder

444 MADISON AVENUE

NEW YORK 22, N. Y.

AUGUST, 1949

Iron Pentacarbonyl Now Offered By Antara Products

Iron Pentacarbonyl, long produced by General Aniline & Film Corp. at its Grasselli plant solely for further processing into Carbonyl Iron Powders, now is available for sale as a chemical product.

Made by the reaction of iron-containing ores with carbon monoxide, Iron Pentacarbonyl ($\text{Fe}(\text{CO})_5$) is a viscid, yellow liquid. It has a specific gravity of 1.466 at 18°C. and a boiling point of 102.8°C. (749 mm.). $\text{Fe}(\text{CO})_5$ is soluble in nickel tetracarbonyl and in most organic solvents. It is insoluble in water.

Produced at the Carbonyl Iron Powder plants of General Aniline & Film Corporation in Grasselli, N. J. and Huntsville, Alabama, Iron Pentacarbonyl is available for immediate shipment in commercial quantities.

According to Antara Products, the chemical should be extremely interesting to researchers in many fields, especially those in organic synthesis work. Working samples are available to interested companies.

Researchers who want to investigate the possibilities of Iron Pentacarbonyl in their products or processes are invited to write to Antara Products, outlining their specific problems.

Of further interest to researchers, are the Carbonyl Iron Powders which are produced by heating the liquid Iron Pentacarbonyl to a temperature where it decomposes into iron in powdered form, liberating carbon monoxide. The results of this method are unique in that the iron powder particles formed by its decomposition are spherical and free of non-ferrous materials.

Until recently, practically all of the Carbonyl Iron Powders produced by General Aniline & Film Corporation went into the electronics industry for the manufacture of high frequency cores. The recent opening of the Huntsville, Alabama plant now makes possible the shipment of Iron Pentacarbonyl and Carbonyl Iron Powders to other industries.

Many Powdered Products Now Being Manufactured with Liquid Non-Ionics

Household Cleaners Easily Formulated with Odorless Antarox "A-400" & "A-480"



Two recently-introduced Antara Products' detergents - Antarox "A-400" and Antarox "A-480" - foaming, essentially odorless, synthetic, non-ionics are being used to good advantage in the compounding of many different types of household cleaners.

Among the products that these versatile non-ionics have helped companies compound and introduce to the market are: (1) an all-purpose household cleaner (2) a paint and woodwork cleaner (3) a floor cleaner (4) a dairy cleaner and (5) a car wash.

Antarox "A-400" and "A-480" are aromatic polyglycol ethers. Essentially odorless features make them particularly valuable for the compounding of household cleaners.

These two products are extremely stable in the presence of acids, alkalis and electrolytes. They do not ionize, will not form insoluble compounds in hard water. They do not easily decompose or separate and will withstand wide variations in temperature. They have remarkably long shelf lives.

If you have a household cleaner in mind, let us help you formulate it. Write for more information today.

Many new detergent compositions, heretofore, impossible to compound, now are being manufactured with liquid, non-ionic detergents of the Antarox "A" series by means of a simple, low-cost mixing process developed recently by the Central Research Laboratory of General Aniline & Film Corporation.

New formulations, long in the development stage, make it possible to incorporate the advantages of non-ionic synthetic detergents into these compositions. Among these advantages are non-sneezing and odorless powders of excellent detergency in hard or soft water.

A further advantage of the new process is that it enables compounders of soap and detergent products who lack expensive spray- or drum-drying equipment to use these versatile, efficient and economical detergents for better cleaners at lower costs. The simplicity of the mixing process makes this possible.

The liquid, non-ionic detergents of the Antarox "A" family are aromatic polyglycol ethers. They are excellent detergents, wetting agents, dispersing agents and emulsifiers. Because they do not ionize they will not form insoluble compounds with hard water. They are extremely stable and will not easily decompose or separate over long storage periods.



Antara* Products

GENERAL ANILINE & FILM CORPORATION

444 Madison Ave.
New York 22, N.Y.

*®

— Advertisement —

Soapers Testify on Fat Prices

THREE prominent soap makers testified recently at hearings before the Gillette agricultural subcommittee of the U. S. Senate, which is investigating utilization of farm products, particularly inedible fats and oils. E. H. Little, president of Colgate-Palmolive-Peet Co., Jersey City, N. J., stated that synthetic detergents now occupy about one-third of the packaged soap market. He said that they had grown about 4,000 per cent in recent years and would continue to occupy an important place in the cleaning preparations field. In spite of the tremendous growth of synthetics, he said that soap sales on a per capita basis last year were only slightly under the figures for the year 1939. Mr. Little declared he knew of no solution for the problem of reduced prices and excess fat production.

The answer to the current question of what to do about low prices and large supplies of inedible fats and oils seems to lie in the direction of their use in synthetic detergents. Floyd M. Barnes, vice-president of Procter & Gamble Co., Cincinnati, told the subcommittee. He said his company was doing research on the problem of employing tallow and greases in the manufacture of synthetic detergents. Synthetics now represent about one-fourth of the total soap production in the United States, and are competing with soaps for the consumer dollar, he stated. Overproduction, not underconsumption seems to be the problem of the fats and oils situation at present, Mr. Barnes said.

The third witness, E. O. Gilliam, president of Gillam Soap Works, Fort Worth, Tex., blamed the "big three soap monopoly" for high soap prices. If the monopoly were dissolved "hundreds of small soap plants would spring up all over the country," causing fat and oil prices to rise, he declared. Among the effects that would follow the dissolution of the "monopoly" would be lower soap prices, less money spent for freight and more for local labor, and increased soap con-

sumption, the Fort Worth soap maker testified.

Also expected to testify were Charles Luckman, president of Lever Bros. Co., Cambridge, Mass., George L. Parkhurst, president of Oronite Chemical Co., San Francisco, and Isaac Fogg, president of Atlas Powder Co., Wilmington, Del. The latter two were to testify on synthetic detergents.

SEEKS TO PUT SOAP UNDER FDA

As we go to press it has just been announced that Senator Gillette has introduced Senate Bill 2392, which would put soaps and probably synthetic detergents under the jurisdiction of the Federal Food, Drug and Cosmetic Act's labeling standards for cosmetics. At present, soaps are specifically exempted. The Gillette bill would eliminate this exemption. Purpose of the bill, according to the Senator is to arouse the consumer to demand more tallow and grease in their soap.

Water Affects Soap Sales

Hardness of water directly affects sales of all types of soaps in the United States a recent survey of the Bureau of Advertising of the American Newspaper Publishers' Association reveals. The study, similar to an earlier one on sales of package soaps and synthetic detergents, is called "Sales of Package Soaps and Synthetics, Laundry Bars and Toilet Soaps." It is being presented to advertisers and agencies in the soap industry. Based on the National Consumer Panel of Industrial Surveys Co., the study

found that three geographical areas containing only 32.7 per cent of all families in the United States account for more than half of the fine fabric soap business. The same is true of light and heavy duty synthetic detergents.

Lukens Steel Is 139

Lukens Steel Co., Coatesville, Pa., recently marked its 139th year of continuing production of iron and steel plate. Founded in 1810, the firm has been under an uninterrupted line of family ownership and management since. Three descendants of Isaac Pen-nock of the founding family are still active in Lukens management, serving as officers and directors. They are: Charles Lukens Huston, first vice-president; Charles Lukens Huston, Jr., vice-president and executive assistant to the president and Stewart Huston, secretary. The company presently employs more than 4,000 people, with a plant covering almost 600 acres.

Earlier the company held its annual plant visitation, followed by a dinner at Coatesville Country Club. Production and management executives from a number of the industries served by Lukens were present for the affair.

New Dairy Detergent

Prairie Farms Creameries, Chicago, milk marketing and processing cooperative for Illinois farmers, has announced development of a new soapless cleansing powder for dairy sanitation. The product will be available to housewives and dairy patrons.

First shipment of soap to Europe under the auspices of CARE took place from Philadelphia recently. Joseph Safer of Lever Brothers Co., Cambridge, Mass., represented his firm. Lever sends one cake of "Swan" soap for every two "Swan" wrappers sent in to CARE's Boston office. First shipment aboard American Defender consisted of 20 tons (250,000 bars) of soap. Mrs. Miriam Mansfield, executive secretary of Philadelphia CARE committee, is shown with Mr. Safer.





THE NAME TO WATCH IN CHEMICALS

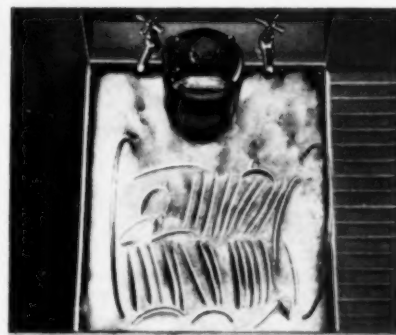
D-40 DETERGENT GIVES FAST ACTION, QUICK PENETRATION, EASIER RINSING

There's plenty of power in the surface activity of D-40 Detergent. Whether you have hard water or soft, this remarkable product gives excellent performance in extremely low concentrations.

With D-40, new economies are now possible in many washing and cleaning operations. A leader among detergents, it is also highly effective as a wetting agent, foaming agent and surface tension depressant.

Quick solubility, shorter wetting times, exceptional stability, easier rinsing, are a few advantages of D-40 Detergent.

If you need detergents for compounding...processing...or manufacturing...call the Oronite office nearest you.



A typical example of improved washing methods is the use of D-40 to loosen grease and food particles from dishes and silverware in dish-washing operations.

The high surface activity and grease emulsifying properties of D-40 quickly remove protein and other foods from soiled surfaces. This outstanding detergent works well with many sterilizing agents and helps eliminate the breeding grounds of harmful bacteria.

In controlled washing operations with hard or soft water and varying temperatures, D-40 will improve the wash at lower cost.

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA

30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

RAW MATERIAL

MARKETS

As of Aug. 4, 1949

A DEFINITE upward turn in prices of fats and oils was recorded during the past month. With a single exception—strangely enough, coconut oil—all important soap making fats and oils are being quoted at higher prices on this date than they were a month ago. Leading the parade are tallow and grease, which have advanced in just the last few days. Fancy grade tallow, following reports of sizeable purchases by some of the large soap producers, is being sold at $6\frac{3}{8}$ cents a pound, on an f.o.b. New York basis. On approximately this date last month fancy grade tallow was bringing $5\frac{7}{8}$ cents a pound. Yellow grease is selling for $4\frac{7}{8}$ cents a pound; up a quarter of a cent in a week.

Coconut oil, on which the two cents a pound processing tax for oil of non-Philippine origin was imposed late in July by a presidential proclamation, has failed as yet to respond to the effect of this action. However, observers feel that it is only a question of time before coconut oil prices begin to rise. The tax goes into effect later this month. It had been suspended since June, 1946, and was reimposed at the request of the Philippine Government, which contends that the supply of Philippine oil is ample. Earlier this year copra from the Netherlands East Indies had been coming into the United States at a lower price than the Philippine product. No copra was shipped to the U. S. from the N. E. I. during June, according to a recently issued report of the Department of Commerce. In the previous three months, 12,000 tons of copra from the Dutch East Indies were imported by the U. S. A shipment of about 2,000 tons of coconut oil is reported to be en route from Holland.

Copra prices have risen in the last 30 days and the article is now reported selling for \$165 a ton, Pacific

Coast basis. The current price represents an increase of \$5 a ton over the early July price.

Vegetable oils whose prices advanced in the past month include cottonseed oil, currently quoted at $13\frac{1}{4}$ cents, as against $10\frac{1}{2}$ cents early last month; corn oil, now 13, was $10\frac{7}{8}$ cents on July 5; soybean oil at $11\frac{1}{8}$ cents is $2\frac{1}{8}$ cents higher than it was a month ago; peanut oil, presently $16\frac{1}{2}$ cents, sold for $12\frac{1}{4}$ cents a pound 30 days ago. Announcement of the 1949 support price program at 90 per cent of parity on the cottonseed crop is responsible for the oil price rise.

After several postponements, hearings on the Granger fat equalization bill (H.R. 4538) got under way late last month. The bill would provide equalization fees on imports of fats and oils equal to the difference between wholesale prices and farm parity. Letters of protest against the bill were reported filed by both the departments of Agriculture and State. Since the bill is directly contrary to the government's foreign trade policy, it is thought likely that it would be subject to presidential veto were it to pass both houses of Congress.

Exports of fats, oils and oil content of oilseeds in the period January to April, 1949, totaled 845 million pounds, including shipments to U. S. Territories, according to the latest summary of the Fats and Oils Situation published by the U. S. Department of Agriculture. The total was more than double exports in the comparable period of 1948. April exports were the largest of any month in the period and totaled 329 million pounds in terms of oil. Exports of soybean and soybeans in terms of oil in January-April were 202 million pounds, compared with 60 million pounds for the year before. Exports of inedible tallow and greases increased from 11

million pounds in 1948 to 141 million pounds in 1949. Lard exports for the first four months of this year were 241 million pounds, as compared with 130 million pounds a year earlier.

Imports of fats, oils and oil equivalent of oilseeds in January-April, 1949 were 313 million pounds, 169 million pounds under the 1948 figure. Most of the drop was in copra. In the first third of this year, the United States had net exports of fats, oils, and oil equivalent of oilseeds totaling 532 million pounds, in contrast to net imports of 115 million pounds for the same period in 1948.

As a sort of footnote to the whole fat and oil situation, it was reported recently that whale oil is reaching the state of oversupply. Three whaling ships out of British Columbia have taken over 100 whales off the west coast of Vancouver in the only North American whaling operation in the Pacific. Unfortunately, none of the oil has been sold and storage tanks are now beginning to overflow. Overproduction of animal and vegetable oil seems to be the answer.

One field in which there seems to be no oversupply this year is insecticides. With insects and infestations more numerous than in the previous two seasons such stand-bys as DDT, toxaphene, chlordane and benzene hexachloride are becoming more difficult to come by. Toxaphene, according to the producer, is definitely in short supply. In fact, the firm recently sent out a circular to its customers advising of the situation and recommending that if they could not obtain toxaphene they try some other insecticide. Substitutes are reported being used for BHC, now known as "lindane."

Continued price declines, which have characterized essential oils and aromatic chemicals, seem to have about reached their end, with higher prices in the offing.

Chemicals you live by



"SOAP NO GOOD," Chief War Bonnet is telling his squaw, "better with **DIAMOND** chemicals." Honest Injun, that's a fact to remember—*Better soaps with Diamond chemicals.* For a permanent source of constant quality chemicals for bar, flake or soap powder, see your nearest Diamond Sales Office, or write direct.

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CHEMICALS

Scouring Powder Bids

In a recent opening for miscellaneous supplies by the Bureau of Federal Supplies, U. S. Treasury Department, Washington, D. C., the following bids were received on an unspecified quantity of scouring compound powder: Murro Chemical Co., New York, 2.98 cents; Day & Frick, Philadelphia, 2.68 cents in 200 pound fibre drums; Haviland Products Co., Grand Rapids, Mich., 5 cents; Apex Alkali Products Co., Philadelphia, 5.6 cents; Imperial Products, Philadelphia, 2.3 cents; General Soap Co., Chicago, \$4.36 cwt; Industrial Soap Co., St. Louis, 7 cents; Sterling Chemical Products, Middletown, Conn., 7.3 cents; G. H. Packwood Mfg. Co., St. Louis, 7 cents; Gamlen Chemical Co., San Francisco, 6.7 cents; American Soap & Washoline Co., Cohoes, N. Y., 2.27 cents; Dickson & Munro Sales Co., San Francisco, 8 cents; Detergent Products Co., Philadelphia, 4.48 cents; National Milling & Chemical Co., Philadelphia, 2.75 cents; Cudahy Packing Co., Chicago, 5.9 cents; Janitors Supply House, Baltimore, 3.97 cents.

Floor Wax Bids

Among the bids on an unspecified quantity of floor wax received in a recent opening for miscellaneous supplies by the Bureau of Federal Supplies, U. S. Treasury Department, Washington, D. C., were those of: Buckingham Wax Co., Long Island City, N. Y., 67.9 cents; S. C. Johnson & Son Co., Racine, Wis., \$1.60; Joseph E. Frankle Co., Philadelphia, 65 cents; International Metal Polish Co., Indianapolis, \$1.50; Windsor Wax Co., Hoboken, N. J., 71 cents; R. M. Hollingshead Corp., Camden, N. J., 78 cents; Continental Car-Na-Var Corp., Brazil, Ind., \$3.67; Wilbert Products Co., Brooklyn, \$1.27; Trio Chemical Works, Brooklyn, 61 cents; Oil Specialties & Refining Co., Brooklyn, 75.9 cents; Janitors Supply House, Inc., Baltimore, 85 cents; Huntington

Laboratories, Inc., Huntington, Ind., \$1.50.

P.O. Toilet Soap Bids

The following bids were received on an unspecified quantity of toilet soap in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: Colgate-Palmolive-Peet Co., Jersey City, N. J., 11.723 cents; Procter & Gamble Distributing Co., Washington, 14.08 cents; Unity Sanitary Supply Co., New York, 22 cents; Pioneer Soap Co., San Francisco, 10.8 cents; Newell-Gutradt Co., San Francisco, 9.5 cents; Kamen Soap Products Co., Barberton, O., 13.12 cents; Swift & Co., East Cambridge, Mass., 11 cents.

Soap Dispenser Bids

In a recent opening for miscellaneous supplies by the Veterans Administration Procurement Division, Washington, D. C., the following bids were received on an unspecified quantity of soap dispensers: Huntington Labs., Inc., Huntington, Ind., 27 dollars; Vestal, Inc., St. Louis, one per cent, \$29.85.

P.O. Soap Bids

In a recent opening for miscellaneous supplies by the Post Office Department Washington, D. C., the following bids were received on soap; Item 1, 55 gallon drums; item 2, 30 gallon drums: Lanair Chemical Corp., Chicago, item 1, 38.33 cents; 2, 39 cents; Texo Corp., Cincinnati, items 1 and 2, 45 cents; E. F. Drew & Co., Philadelphia, item 1, 31.5 cents; 2, 33.6 cents; Chemical Affiliates, San Carlos, item 1, 38 cents; 2, 43 cents; Wm. F. Gable Co., Brooklyn, item 1, 32.3 cents; 2, 36.6 cents; West Disinfecting Co., Long Island City, N. Y., item 1, 30 cents; 2, 31 cents; Bayer Chemical Lab., Co., Chicago, item 1, 70.35 cents; 2, 72.37 cents; Ampion Corp., Long Island City, N. Y., item 1, 55 cents; Davies-Young Soap Co., Dayton, O., item 1, 43.5 cents; 2,

53.5 cents; Bri-Test, Inc., New York, item 1, 23.8 cents; 2, 29.7 cents; Clifton Chemical Co., New York, item 1, 37 cents; 2, 47 cents; Crystal Soap & Chemical Co., Philadelphia, item 1, 25.5 cents; 2, 30.5 cents; Harley Soap Co., Philadelphia, item 1, 23.5 cents; 2, 38.5 cents; Marjo Products Co., Chicago, item 1, 57 cents; 2, 63 cents; Glenn Laboratories, St. Louis, item 1, 31 cents; 2, 33 cents; Kutol Products Co., Chicago, items 1 and 2, 63 cents; Dickson & Munro Sales Co., San Francisco, item 1, 29.9 cents; 2, 37.9 cents; Trio Chemical Works, Brooklyn, item 1, 30 cents; 2, 33.5 cents; Dorsett-Jones, Inc., Baltimore, item 1, 47.62 cents; item 2, 51.59 cents; R. M. Hollingshead Corp., Camden, N. J., item 1, 42 cents; 2, 48 cents; Fischer Industries, Inc., Cincinnati, item 1, 52.8 cents; 2, 56.3 cents; Chemical Manufacturing and Distributing Co., Easton, Pa., item 1, 33 cents; 2, 35 cents; Marjo Products Co., Chicago, 2 per cent, item 1, 36 cents; 2, 42 cents.

Fatty Acid Separation

Directed interesterification, in which ester-ester interchange is carried out in triglyceride mixtures with simultaneous crystallization of solid glycerides, has been applied to glyceride mixtures containing free hydroxyl groups. Solid saturated diglycerides and saturated monoglycerides were precipitated from cottonseed oil. The method makes it possible to segregate the high-melting and low-melting fatty acids of a fat practically completely into separate ester fractions. E. W. Eckey and M. W. Formo, *J. Am. Oil Chemists' Soc.* 26, 207-11 (1949).

Silicosis from Soap Powder

The unusually high incidence of silicosis among workers in a washing-powder factory is reported. Such cases developed in only 4-11 months and were complicated by tuberculosis. The individual effects of the constituents of the dust were not sufficient to account for the large number of cases. P. Rossing, *Deut. Gesundheitsw.* 2, 317-20; through *Chem. Abs.*

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TRADE MARKS

THE following trade-marks were published in the July issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Stim—This for shampoo. Filed Dec. 10, 1946 by Standard Laboratories, New York. Claims use since Dec. 31, 1939.

The following trade-marks are published in compliance with section 13 (a) of the Trade-Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of \$25 must accompany each notice of opposition.

Fitch's—This for Shampoo. Filed Oct. 24, 1947 by F. W. Fitch Co., Des Moines, Ia. Claims use since 1893.

Solad—This for synthetic detergents used in dry cleaning. Filed May 1, 1948 by E. F. Drew & Co., New York. Claims use since Jan. 15, 1945.

Calar—This for soaps. Filed May 17, 1948 by Calar Chemical Co., Pasadena. Claims use since Apr. 20, 1948.

Gilta—This for shaving cream. Filed June 7, 1948 by Archie Galanter, Brooklyn. Claims use since May 10, 1948.

Kitchen Klenzer—This for cleaning and scouring preparation. Filed June 10, 1948 by Fitzpatrick Bros., Inc., Chicago. Claims use since February 1908

Tadcaster—This for soaps and dry cleansing fluids. Filed May 12, 1948 by H. E. Shaw Co., Worcester, Mass. Claims use since June 3, 1942.

Poofball—This for preparation for cleaning toilet bowls. Filed June 19, 1948 by William Harry Delyn Hornaday, Jr., Los Angeles. Claims use since Apr. 15, 1948.

Mrs. Lane's—This for soap. Filed Aug. 4, 1948 by Clover Farm

Stores Corp., Cleveland. Claim use since Nov. 1, 1935.

Radelle—This for soaps. Filed Oct. 8, 1948 by Commercial Laboratories, Inc., Newark, N. Y. Claims use since Aug. 19, 1948.

Dowell—This for sequestering agents. Filed Feb. 9, 1948 by Dowell, Inc., Midland, Mich. Claims use since Feb. 21, 1935.

Africano—This for insecticides and fungicides. Filed July 22, 1948 by Africano Laboratories, New York. Claims use since July 19, 1948.

Mello Sheen—This for general cleansing agent. Filed Apr. 27, 1948 by Paulsen & Roles Laboratories, Portland, Oreg. Claims use since Nov. 16, 1937.

Arcolene—This for paste dry cleaning soap. Filed Jan. 31, 1948 by Armour and Co., Chicago. Claims use since March 1934.

Olex—This for soap. Filed Jan. 31, 1948 by Armour and Co., Chicago. Claims use since Feb. 27, 1931.

Pumex—This for grit hand soap. Filed Jan. 31, 1948 by Armour and Co., Chicago. Claims use since 1920.

Imperial Lilac—This for toilet soap. Filed Mar. 17, 1948 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Jan. 31, 1910.

Acto—This for petroleum sulfonates for use as detergents. Filed Mar. 19, 1948 by Stanco, Inc., New York. Claims use since Nov. 3, 1944.

Mrs. Foamy—This for cleaning liquids. Filed Sept. 11, 1948 by Parker Products, Waterbury, Conn. Claims use since Aug. 14, 1947.

Invinso—This for dishwashing compound. Filed Sept. 28, 1948 by John Sexton & Co., Chicago. Claims use since Aug. 5, 1948.

47—This for detergent washing powder. Filed Sept. 29, 1948 by Pfanstiehl Detergent Chemicals, Inc., Chicago. Claims use since October 1946.

McGraw's Polk Easy—This for insecticide. Filed June 14, 1948 by C. L. McGraw, Kathleen, Fla. Claims use since 1926.

Vermi Tox—This for insecticide in liquid form. Filed June 29, 1948 by

The De Pree Co., Holland, Mich. Claims use since Aug. 28, 1922.

Free-Rinse—This for cleaning compounds. Filed Sept. 2, 1947 by Chemical Compounding Co., Chicago. Claims use since Aug. 1, 1943.

Griffin—This for materials for cleaning and polishing shoes. Filed June 17, 1948 by Griffin Manufacturing Co., Brooklyn. Claims use since May 26, 1930.

Toni—This for shampoo. Filed May 7, 1948 by Toni Co., St. Paul, Minn. Claims use since May 27, 1947.

Cyan-Chlor—This for briquettes containing chemicals used as a rodenticide. Filed Aug. 4, 1948 by Safety Fumigant Co., Boston. Claims use since June 4, 1948.

Octofen — This for fungicide. Filed Oct. 27, 1948 by McKesson & Robbins, Inc., New York. Claims use since Sept., 1947.

Shanghai—This for bubble bath salts. Filed June 5, 1948 by Lenthéric, Inc., New York. Claims use since 1930.

Royal Flush—This for chemical preparation for removing rust and dirt and cleaning cooling systems of automobile radiators. Filed Feb. 18, 1948 by Lion Chemical Co., Chicago. Claims use since Feb. 2, 1948.

Unox—This for surface active chemical compositions. Filed Feb. 13, 1948 by Carbide and Carbon Chemicals Corp., New York. Claims use since Dec. 29, 1947.

Pena Gym Sealer—This for liquid floor sealer. Filed Feb. 7, 1948 by C-Z Chemical Co., Beloit, Wis. Claims use since Feb. 20, 1939.

Anderol—This for synthetic detergent for use in general house cleaning. Filed Sept. 20, 1948 by Lehigh Chemical Products Co., Trainer, Pa. Claims use since Sept. 1, 1946.

MM—This for germicidal disinfectant. Filed Feb. 18, 1948 by Modern Methods, Inc., Atlanta. Claims use since Mar. 6, 1947.

Jitter Bug—This for insect repellent. Filed May 27, 1948 by Sayman Products Co., St. Louis. Claims use since June 26, 1941.

Re-Life-It—This for combination cleaning, polishing and waxing preparation. Filed Dec. 4, 1947 by Disney Products Co., Redondo Beach, Calif. Claims use since Sept. 25, 1947.

Acranil—This for vermifuge. Filed June 25, 1948 by Winthrop-Stearns, Inc., New York. Claims use since June 2, 1948.

Cover the Earth—This for waxes and polishes. Filed Aug. 29,

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1947 by Sherwin-Williams Co., Cleveland. Claims use since 1893.

Maid of Honor—This for rug cleaners. Filed Feb. 18, 1945 by Sears, Roebuck and Co., Chicago. Claims use since Jan. 15, 1945.

Fum-I-Kill—This for moth compound in liquid form. Filed Nov. 4, 1947 by Wade, Wenger & Associates, Inc., Chicago. Claims use since 1932.

Jewel T—This for heavy duty household cleaner. Filed Apr. 24, 1948 by Jewel Tea Co., Barrington, Ill. Claims use since 1934.

Dr. Salsbury's—This for disinfectants, fumigants, rodenticides, etc. Filed Apr. 30, 1948 by Dr. Salsbury's Laboratories, Charles City, Ia. Claims use since Nov. 19, 1947.

Lucas—This for insecticides, fungicides, germicides. Filed May 18, 1948 by Lucas Kil-Tone Co., Philadelphia. Claims use since Jan., 1923.

Armand—This for shampoo. Filed May 21, 1948 by Armand Co., Des Moines, Ia. Claims use since May, 1916.

Q-BEC—This for preparation for treating athlete's foot. Filed June 24, 1948 by Ver-E-Gud Products, Inc.,

New York. Claims use since May 1, 1948.

Lynwood's—This for shampoo. Filed July 9, 1948 by Ployhar and Heidt Co., County of Napa, Calif. Claims use since July 1, 1936.

Aire-Con—This for combination household deodorant and insecticide. Filed July 23, 1948 by Hysan Products Co., Chicago. Claims use since June 15, 1940.

Duodex—This for mothproofing composition. Filed Aug. 23, 1948 by Nuodex Products Co., Elizabeth, N. J. Claims use since July 16, 1948.

Seedox—This for fungicide. Filed May 4, 1948 by Sindar Corp., New York. Claims use since Dec. 5, 1946.

Tossit—This for insecticides. Filed Nov. 8, 1948 by Southern Entomological Co., West Palm Beach, Fla. Claims use since Apr. 15, 1948.

Armour Names Robinson

Armour & Co., Chicago, recently announced the appointment of H. M. Robinson as advertising manager of the company's soap and industrial products division.

Ritter Food Show Exhibitor

F. Ritter & Co., Los Angeles, was among the exhibitors at the Institute of Food Technologists Convention held in the Civic Auditorium, San Francisco, July 11-14.

Monsanto Men Advanced

The appointment of Charles H. Sommer, Jr., and David L. Eynon as assistant general managers of the organic chemical division of Monsanto Chemical Co., St. Louis, was announced recently. Mr. Eynon, who was previously production manager for the company's plant at Monsanto, Ill., and Nitro, W. Va., is succeeded by Paul G. Marsh, assistant production manager for the division. Mr. Marsh's new title is production manager.

Mr. Sommer, who has been assistant coordinator of sales for the company, has been with Monsanto since 1934. Appointed manager of plasticizers and intermediate sales for the organic chemicals division, he later became assistant general manager of sales for that division.

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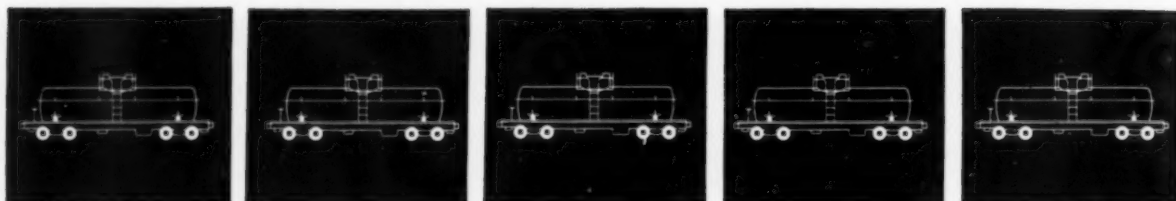
Pale Wood Rosins with absolute cleanliness ... complete freedom from foreign matter ... under production control that makes every shipment of the same rosin identical with every previous shipment.

This means a Uniformity you can depend on ... for batch after batch ... with never a change in your formula.

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Wyandotte Caustic Soda, as produced by the Mercury Cell method, meets the highest standards of quality. Commercially, it is free from sodium chloride, sodium chlorate, iron and practically all other impurities.

In the manufacture of rayon and other products—wherever high-grade caustic soda is essential—this truly fine chemical can be used *as delivered*,

without further processing. Its purity and uniformity do not depend upon the efficiency of a purification system.

Recently completed facilities have enabled us to double our previous production of Mercury Cell Caustic. If your chemical needs include quality caustic soda, why not write us today?

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PROPYLENE DICHLORIDE • CHLOROETHERS
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS



P. & G. Man to ACS Board

Dr. Albert S. Richardson, associate director of the chemical division of the Procter & Gamble Co., Cincinnati, has been appointed recently to the newly-created advisory board of the American Chemical Society News Service. The group will conduct public relations activities of the society, largest professional association of scientists.

A native of Tennessee, Dr. Richardson was graduated from Princeton University in 1913. He also studied at Columbia University and the University College, London.

After teaching chemistry two years at Princeton and working a brief period for E. I. du Pont de Nemours & Co., Dr. Richardson joined the P. & G. staff in 1921 to organize the research department within the chemical division of the company. He headed this department until 1941, when he became associate director of the division.

Dr. Richardson has also served on the advisory boards of *Industrial and Engineering Chemistry* and *Chem-*

ical Engineering News, publications of the American Chemical Society, since 1933.

New Antara Govt. Dept.

A new "Government Service Department" to coordinate information, sales and service to Federal, state and municipal governments was set up recently by Antara Products, General Aniline & Film Corp., New York. John P. Conrad is in charge of the new department. A complete file of Government specifications applicable to "Antara" products has been set up by the new department.

Western Packaging Show

Cost reductions in the fields of packaging, packing and shipping was the basic theme for the sessions of the 2nd Annual Western Conference on Packaging, Packing and Shipping to be held concurrently with the 2nd Annual Western Packaging Exposition at the Civic Auditorium, San Francisco, Aug. 9-12. An attendance of 9,000 was expected for the meeting.

Weigel New Victor Head

Rothe Weigel, since 1947 executive vice-president, recently was elected president of Victor Chemical Works, Chicago. He succeeds Walter B. Brown, who died in March of this year. Francis M. Anable was named as vice-president in charge of production.

Dishwashing Machine Rise

Sales of automatic electric dishwashers in 1949 will be nearly double the 1948 sales and should total around 400,000 machines—thus considerably expanding the market for dishwashing detergents—, according to a recent statement by Stephen Osborn, vice-president of Economics Laboratory, Inc., St. Paul, Minn. Most dishwashing machines, which operate on AC current and at water temperatures of 140 to 160 degrees F., require built detergents that do not foam. The polyphosphates are employed in dishwashing detergents since they prevent the formation of scale, thus keeping open drains and making cleaning of the washer unnecessary.

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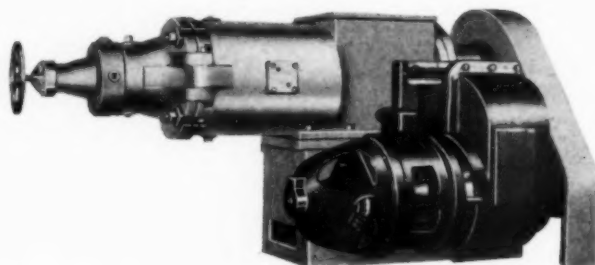
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Designed for heavy duty milling of toilet and flake soap.

GIANT 14-INCH HOUCHIN PLODDER for heavy production.



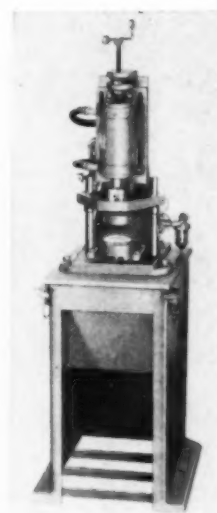
This giant Houchin Plodder has a capacity of from 4,000 to 6,000 pounds per hour. Screw diameter is 14 inches. Houchin Plodders have screw diameters from 2½ to 14 inches.

MODEL "A" SAFETY AIR PRESS

A feature of this press is that the operator must use **both** hands to operate the press. Two air control levers must be held down simultaneously.

Other features are:

Single or multiple power strokes, any desired "dwell." Pressures up to 2500 lbs. Automatic lubrication. Other models with pressures up to 10,000 lbs.



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Manufacturers of Soap Making Equipment

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PRODUCTION SECTION

PERFUMING OF SOAPS

P RIMARY alcohols are stable to cold alkalis and are especially suitable for soap perfumes; thus oils of geranium, palmarosa, rose, gingergrass, and sandalwood can be used without any fear as far as color and odor are concerned. Primary alcohols oxidize to form other compounds with changed olfactory properties. It is advisable therefore to combine them with suitable antioxidizing agents.

Among the ketones, acetophenone is suitable for perfuming soap, or in some cases methyl acetophenone or *para*-tolyl methyl ketone are preferred. The acetals of hydroxy citronellal and phenyl ethyl alcohol are of interest, the high boiling points of these giving them fixative properties which can be blended with the base. They are completely stable in soaps, and do not cause discoloration. In order to stabilize amyl cinnamic aldehyde it is advisable to add a small quantity of diphenylamine, or to combine the standardized alcohol with a partially oxidized aldehyde product.

Higher fatty aldehydes are suitable only when diluted with diethyl phthalate or phenyl ethyl alcohol. Among aldehydes used in soap perfuming are heptylic aldehyde and octyl aldehyde, both with an odor recalling lemons and oranges, used particularly in eau-de-Cologne compositions, fixed with methyl nonyl ketone. Nonyl aldehyde has an odor resembling that of various flowers. For rose compositions, methyl hexyl acetaldehyde, with an odor of unripe nuts, and decylic aldehyde may be used. Saturated and unsaturated undecylic aldehyde and dodecylic aldehyde are used for flower odors, methyl acetaldehyde for

fancy compositions. Fixation of aldehydes is important.

Avoiding Rancidity

THE selection of soap perfumes has also to be considered from the point of view of their acting as oxidative catalysts to cause rancidity in soap. Perfume compounds may be divided into the following groups:

(1) Substances resistant to oxidizing agents such as thymol, eugenol, and isoeugenol.

(2) Substances which neither inhibit nor promote oxidation such as citronellol, menthol, alpha-terpineol, camphor, and phenyl acetic acid.

(3) Substances promoting oxidation:

(a) Mild oxidizing agents such as alpha-pinene, linalol, geraniol, citronellol, benzoic acid, salicylic acid, and nerol borneol.

(b) Stronger oxidizing agents such as isopulegol, benzyl alcohol, phenyl ethyl alcohol, and anethole.

(c) Powerful oxidizing agents such as isosafrole, benzaldehyde, acetophenone, benzophenone, ionone, vanillin, and piperonal. Safrole has a special position since this product first reacts as an oxidizing agent and then as a stabilizing agent.

Method of Incorporation

O THER points are also worth consideration. Soap becomes "short" when the amount of perfume added is too great. It tends to become less pliable and unworkable when excess of lemon oil or excess of solid perfume compounds such as coumarin are added. Perfume should be incorporated

with quick and fine distribution within the soap, and with combination of the perfume with soap by emulsifiers.

Perfumes for liquid soaps are usually mixed with an equal amount of alcohol before adding to the soap. Palm kernel oil hinders the use of good perfumes; it is therefore better to use coconut oil as the fat charge of liquid soap. Good liquid soap may be perfumed only after the soap is completely made and filtered. Selection of the perfume raw materials should be such that they are completely soluble in the aqueous soap. A reasonably good alkali-stable perfume composition suitable for liquid soaps, may be made from:

	Parts
Lavender oil (Montblanc)	100
Spike lavender oil	150
Bergamot oil	20
Peppermint oil	2

Use 1-2 per cent of the perfume.

Special soaps are particularly difficult to perfume. For example, oxygen soaps must be particularly considered with respect to oxidizing agents. Alcohols, ethers, esters, and acids may be used in formulating a perfume compound for this type of soap. In almond-oil soaps, synthetic benzaldehyde is frequently used.

Some of the earlier soap perfumes made up exclusively with essential oils and natural fixatives are still quite satisfactory. Perfuming is easier when dealing with a first-class soap base containing best quality tallow as the fat charge. For example 100 kilograms of tallow-base soap may be perfumed with the following:

	Grams
Geranium oil	500
Linalol oil	100
Patchouli oil	60
Vetiver oil	30
Sandalwood oil	100

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- CORROSION-RESISTANT
- NO METALLIC CONTAMINATION
- EASY TO KEEP CLEAN

Lukens Inconel-Clad Steel jacketed mixing kettle for cosmetics, being completed at Alloy Fabricators, Division of Continental Copper & Steel Industries, Inc., Perth Amboy, New Jersey.



Many soap companies have adopted Lukens Clad Steels—Nickel-Clad, Stainless-Clad, Inconel-Clad and Monel-Clad—as a means of combatting corrosion and metallic contamination. As a result of their widespread use, equipment builders recognize that clad fabrication introduces no unusual problems.

In these materials, claddings 10% or 20% of total plate thickness are permanently bonded to steel backing plate. Thus, you get

corrosion-resistant properties equivalent to these *solid* metals at the lower cost of *clad* steels. All are available in the extra-smooth sodium hydride finish, making the equipment extra easy to keep clean.

Bulletin 492 tells you more about Lukens Clad Steels in the Soap Industry. For a copy, write Lukens Steel Company, 446 Lukens Building, Coatesville, Pennsylvania.



LUKENS

Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad

STEELS

SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

Verbena oil	150
Sweet orange oil	100
Bergamot oil	200
Rose oil, genuine	50
Resinoids (labdanum, oakmoss, olibanum)	200

Use of synthetic perfume compounds of standard quality will give an original odor unattained by natural perfumes, as in the following, suitable to perfume 100 kilograms of tallow-base soap:

	Grams
Amyl salicylate	130
Isobutyl salicylate	30
Coumarin	80
Heliotropin	40
Geraniol	80
Geranyl acetate	30
Linalyl acetate	60
Trans-decyl-hydro-beta-naphthyl acetate	15
Linalol	100
Eugenol	20
Salicylic acid methyl ester	30
Santalol	50
Methyl naphthyl ketone	20
Methyl ionone	40
Cinnamon	20
Benzyl cinnamate	40

Musk xylol	2
------------------	---

This will give a fine clover odor.

By using 10-30 per cent of essential oils with 2-20 per cent of synthetic perfume materials, much improved stable preparations may be produced. Examples are replacement of natural rose oil by synthetic, replacement of geranium oil by geranyl acetate, and substitution of linalyl acetate and eugenol by bergamot oil and clove oil. It is suggested that natural fixatives are preferable to cinnamon, musk xylol, and benzyl cinnamate.

A simple yet powerful perfume is given by:

	Grams
Methyl acetophenone	400
Trans-decyl-hydro-beta-naphthyl acetate	100
Dark resinoids of labdanum	50
Oil of citronellol or rosemary	200

T. Ruemele, *Perfumery & Essen. Oil Record* 40, 86-9, 115 (1949).

Fatty Acids of Soap

The component fatty acids of soaps from the various steps of the soap-boiling process were determined, in order to study the fractionation of the individual soaps when the soap mass in the kettle forms separate liquid layers, one of which is of liquid crystalline structure. Fractionation occurs both on graining and fitting. Acids up to C_{16} are enriched in the lye and the nigre. Acids from C_{18} and up are enriched in the neat. The analytical data obtained are given in 6 tables. One table shows the component acids of soaps in the saponified fat, lye, soap before fitting, neat soap, and nigre. *Svensk Kem. Tid.* 60, 267-81; through *Chem. Abs.*

Oil Color Measurement

The report of the Oil Color Committee dealing with oils and nickel sulfate solutions indicates that there is a standard deviation of up to two per cent transmittance between measurements made by different laboratories on different instruments. This standard deviation is decreased by one-half when measurements are made by a single laboratory on a single instrument. The data indicate that nickel sulfate may be a satisfactory solution to use in standardizing the instruments in use in various laboratories. At low color levels the Lovibond system is about as reliable as the spectrophotometer, but at high color levels the latter shows greater reproducibility. *J. Am. Oil Chemists' Soc.* 26, 45-51 (1949).

Alkali Metals in Silicates

Alkali metals can be determined simply in silicates and similar material as follows: evaporate the sample with sulfuric and hydrofluoric acids to remove silicon. Ignite the residue to convert most of the aluminum and iron sulfates to oxides. Add ammonium hydroxide to the water suspension of the residue. Precipitate calcium and magnesium as oxalate in 85 per cent acetic acid solution. Recover the alkali metals as sulfates from the resulting filtrate. P. J. Elving and Po Chuan Chao, *Anal. Chem.* 21, 507-10 (1949).

Separation of Neat Soap

IN conventional soap making, during each change the mass is boiled by open steam through coils at the bottom of the kettle, causing the soap mass to swell, and the intimate mixing of soap and lye solution. At the end of each change the steam is shut off and the mass is allowed to settle. Grain soap curd rises to the top, and the lye forms underneath and is withdrawn. In the finishing operation, by boiling with water and small amounts of lye, neat soap is made to rise to the top, and nigre settles underneath. This takes up to 60 hours and has other inconveniences.

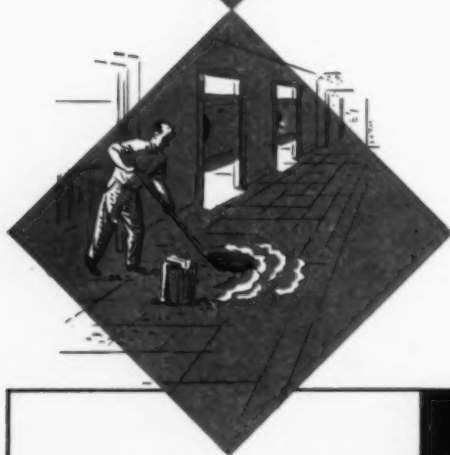
It is now possible to condition a batch of kettle soap from one of the preliminary charges, prior to finishing, and then treating the conditioned soap so that nigre or lye can be separated rapidly from the neat soap by centrifuging. Such conditioning, is effected by reducing the total fatty acid content to 50-60 per cent of the total weight of the composition by addition of salt solution, so that on stirring, the soap mass remains in a homogeneous condition. Stirring is continued

while withdrawing the conditioned soap in a continuous stream. The salt solution is intimately mixed in as a continuous stream, with stirring, and is so proportioned as to form a neat soap phase at 180-200°F. The soap-salt mixture is centrifuged to separate out the neat soap. Further salt solution is added to reduce fatty-acid content to 45-55 per cent. In this way a kettle of soap may be finished and settled in a battery of centrifuges at the rate of about 2500 pounds of neat soap containing 63 per cent fatty acid, per hour per centrifuge.

By maintaining the bowl adjustment of the centrifuge constant and changing the salt content, the proportions of soap removed from the mass in the heavy effluent may be varied from only a trace of fatty acid to amounts up to and sometimes exceeding 35 per cent of the total fatty acid. This ratio of salt to soap will determine the constitution of the heavy effluent. It will be nigre or lye according to whether the salt proportion is low or high. Lever Brothers & Unilever Ltd., British Patent No. 23,810.

NONIC 218

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✓✓ *Retains germicidal activity

✓✓ Increases detergency

✓✓ Increases wetting ability

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*When Q-salts are compounded with NONIC 218 more germicidal activity is retained than when other synthetics are used.

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Metal Filter Sheets Solve Fat Filtration Problems

SEVERAL years ago the problem of filter cloth deterioration in plate-and-frame presses became acute in at least one petroleum refinery. Deterioration was caused by the hardening and tearing of the filter cloths during filter operations on contacting acid-treated lubricating oils. The leaks of spent adsorbent through the tears in both paper and cloths, the holdup in operations for cloth replacements, and the cost of the discarded cloths were annoying and expensive.

The problem was solved by the substitution of perforated metal sheets for the filter cloths. These sheets were fitted over the faces of the plates and the filter papers fitted to the faces of the perforated sheets. When the filter was closed the plates and frames were perfectly gasketed. The flow rate was the same as when the cloths were used, the tearing of cloth or paper was eliminated, the press cleaning was easier, swifter, and more complete than before, the downtime for cleaning was reduced. The perforated sheets were a permanent installation (in one case, being used continuously for over twelve years) compared to the previous high turnover of filter cloths.

Recently, a commercial miscellaneous fat filtration operation was investigated in which the difficulties with filter cloths closely paralleled those previously found in the petroleum filter operation on acid-treated oils. Here again, perforated metal sheets were substituted for the filter cloths and again proved to be totally resistant

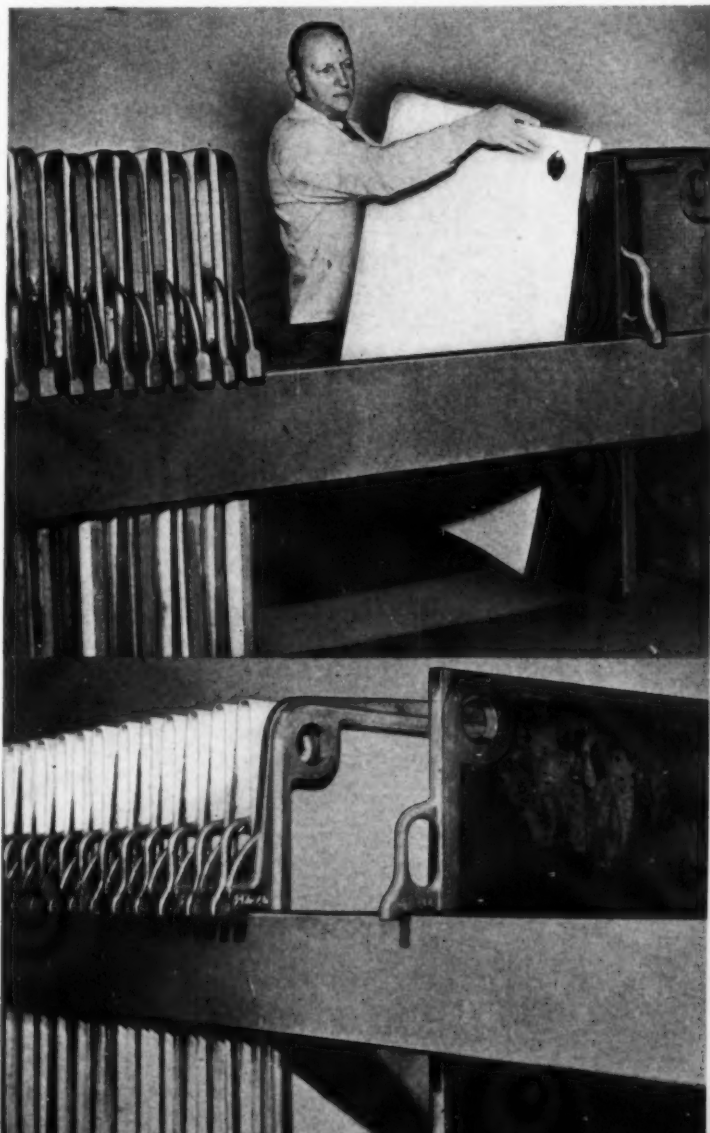
to the deteriorating action of the hot, slightly acidic fat. The investment of approximately \$500 for the fabrication of the perforated sheets was paid out in a period of three months by the savings in cloth alone, and the operators were gratified by the other advantages associated with the use of the sheets.

Details of the fabrication and installation of the metal sheets are extremely simple: Metal sheets are cut to size from 18 to 24 gauge perforated steel-plate or tin-plate, the perforations being in the size ranges 1/16" holes on 1/8" centers to 1/8" holes on 3/16"

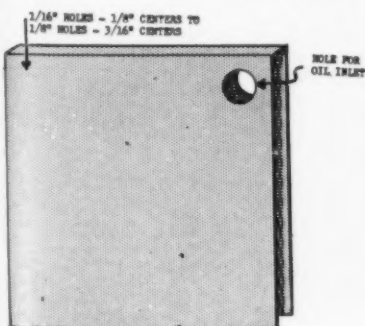
centers. The metal sheets are cut equal in width to the plate of the press, but in length are cut *twice* the height of the plate plus the thickness. Each rectangle is bent double, the fold in the sheet being bent sharply to fit the top edges of the plate to allow the sheet to hang evenly over its surface. The sheet is then hung like a saddle over an individual plate of the press. Filter papers (with hole cut at inlet port) are placed against the faces of the sheet and the frames of the press pushed against the papers. When the press is tightened, the perforated sheets make perfect gaskets (preventing dripping into the pan) and the press is ready for operation.

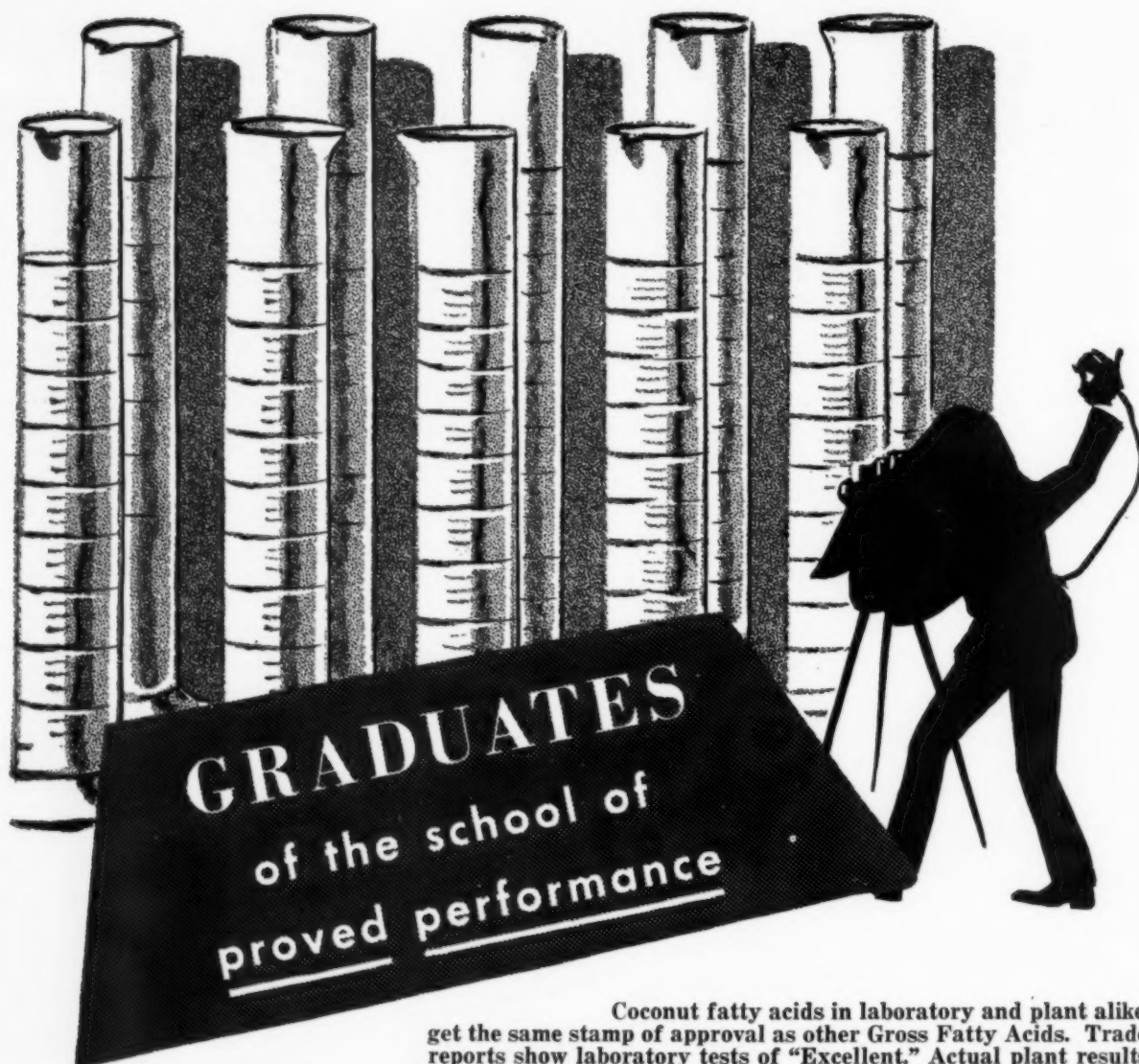
The sketch shows a perforated sheet cut to shape and folded, for lowering over the press plate. The photographs show perforated sheets and filter papers as prepared for the commercial press used for fat filtration.

Photographs at right show perforated sheets and filter papers as prepared for the commercial press used for fat filtration.



Side view of perforated metal sheet (20-24 gage tin plate or steel) which fits tightly over filter press plate. Filter paper, is fitted tightly over this sheet.





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By E. G. THOMSEN, Ph.D.

WITHIN less than a year, the situation with regard to supplies of machinery and equipment has reversed itself and gone from a sellers' to a buyers' market. Buyers no longer have to plead for the chance to purchase a piece of equipment and be told then that they will be put on a waiting list and if steel or some other item is available or if this or that condition does not arise, deliveries will be made in some vague, future period. Machinery makers are out after business again and their salesmen are wearing out shoe leather rather than the seats of their pants. As far as new machinery is concerned, we have arrived at what was termed "normalcy" after World War I. In all but a few instances, it is possible now for a production man to get whatever durable goods he desires with reasonable promptness. After several years of frustration and disappointment, normal plant improvement and operation again can be undertaken. The days ahead should be brighter. Labor, too, is more reasonable in its wage demands and is giving more production per man for wages received.

In spite of it having been proved by past experiences that slack periods, such as we are experiencing now, are the time to improve plant efficiency, many manufacturers hesitate to do anything about it. The fear that a decline in business may be permanent or that installation prices will drop still lower is ever present. Manufacturers find themselves so busy filling orders that there is no time for modernization. In the meantime, costs have risen.

This is a good time to act if plant improvements are contemplated. Prices have dropped and we can hardly expect a return of pre-war costs under our present economy.

Several courses of action are open in planning the modernization of a plant. In one case, a firm of en-

gineers may be brought in to do a survey and make recommendations. One disadvantage to calling in an outside firm is that those making the survey are not always thoroughly familiar



DR. THOMSEN

with the manufacturing details of the plant they survey. On more occasions than one, we have seen cases in which outside consultants have introduced plant improvements that looked fine but would not operate satisfactorily even after expenditures for new equipment and complete alterations had been made.

Another approach is for the staff of a company to do their own modernization. This is satisfactory but it may have the drawback of poor perspective in that the production men may be so close to their work that their view is limited. They are set in their ways and in ideas as to operational methods and may not have had the opportunity to see how someone else is doing the work more efficiently. The best procedure is teaming up outside advisors and plant men. This usually gets the best results when machinery and equipment are selected. They actually operate efficiently. This approach has the additional virtue of making the inside men feel they have

had their say and they will take pride in seeing that their ideas work out.

Another factor to be considered in plant modernization is the role of common labor. The advice of ordinary workmen on plant changes is often valuable. The old timers in plant work, particularly those who have lived with the machines day in and day out and have actually run them, often can put forth ideas that are overlooked by plant engineers and outside consultants. During our plant experience years, we have seen numerous incidents where this has happened. Quite recently, we witnessed such an occasion. The question of installing a new mixing kettle was being discussed. The supplier of the equipment and the plant engineers had practically decided upon a new type mixer and a coil arrangement with which the kettle was to be equipped to make a rather difficult product. At the last moment, the men who actually handled the equipment were called into the picture. After a few moments of discussion, it was shown that certain alterations had to be made or difficulties would be encountered. The changes were made. Not only did they save money on the cost of the equipment but economies in operation resulted as well.

In contemplating plant improvements, it must be remembered that these changes can pay dividends in at least two ways. The first, through obtaining greater production at lower cost. In order to attain this goal, it is foolhardy to over-economize. Efforts should be made in every direction to mobilize all the brains, ideas and skill that are obtainable. If at all possible, plant changes should be made without any interruption of production. Other goals are the production of a greater volume per square foot of floor space, and reduction of labor costs. Obtaining the best new machinery and equipment available is generally sound economy, even though it may mean the scrapping of old installations. The second way in which plant modernization pays, is in raising the morale of the employees. No man or woman can do his or her best work in dark, dirty, unhealthy workrooms. One does not

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have to visit many plants in the chemical specialties industries to discover that unfavorable working conditions prevail in entirely too many plants. These conditions not only affect the people on the job but also make it difficult to employ new people, especially if they can find suitable work elsewhere.

Plant modernization should include not only the installation of new processing machinery. It must also take into consideration clean-up of the plant so as to make the working surroundings attractive. Again, in this respect, it is a good plan to enlist the ideas of the labor force. Laborers not only have ideas as to labor saving methods but down deep harbor certain peeves that keep them from doing their best work. When consulted on a better way to do something in a plant, a favorable vent for letting out those grudges in a constructive way is developed.

Our advice to those who contemplate plant modernization is to act now upon a constructive plan and to consider it from every angle.

Low Cost Respirator

AERICAN Optical Co. of Southbridge, Mass., is offering their "AO" respirators for protection from dusty items such as soaps, alkalis, and drugs. These are moderately priced, considering their durable construction. The dust masks are light in weight, easy to breathe through, close fitting, feature a smooth rubber contact for the face and have a non-sticking, non-reversing, low resistance exhalation valve.

Clad Steels

IN considering corrosion proof fabrication, the possibility of using clad steels instead of the more expensive solid steels should be considered. Alan Wood Steel Co. of Consohocken, Pa., is offering their "Perma-Clad" stainless clad steel. It combines 20 per cent stainless steel cladding with carbon steel plate to form a sheet of excellent forming qualities. It is more economical and very useful for many purposes to which stainless steel sheets are put.

Another prominent maker of clad steels is the Lukens Steel Company, of Coatesville, Pa. This company operates the world's largest plate mill. They make nickel clad, stainless clad, Monel clad or Inconel clad steels. These consist of a light layer normally with a thickness, either 10 per cent or 20 per cent of total plate thickness, uniformly bound to the heavier steel plate. This layer is thick enough in most cases to resist the ordinary corrosion. Their Bulletin 389 gives further information.

Atomizer Cap

CONTAINER Specialty Co. of Cleveland, is offering a novel device that makes powdered products more effective. The device is a powder atomizer cap that fits round refillable or non-refillable metal fiber or glass containers. It can be fitted to any height or diameter package to match its color. The tubes may be slotted also to adapt the cap to any type powder.

Insect Proof Adhesive

A PRODUCT called "Beetle-Pel" sold by National Adhesive Co., New York, is said to prevent boring insects from attacking the contents of packages on which it is used. The adhesive contains a harmless insect repellent which protects foodstuffs or other items in tight wrapped cartons.

Continuous Soap Cutter

SHARP Bros. of Bayonne, N. J., have descriptive literature available on their adjustable continuous soap cutter. This device may be at-

tached to a plodder or other type soap bar extender as a desirable labor saver.

Automatic Solutionizers

AN entirely automatic solutionizer or dispensing detergents to wash tanks of dishwashing machines is available from Independent Specialties, Chicago, 2. This piece of equipment is said to hold the density of solutions constant. It is economical to use, durably constructed and causes no trouble during use.

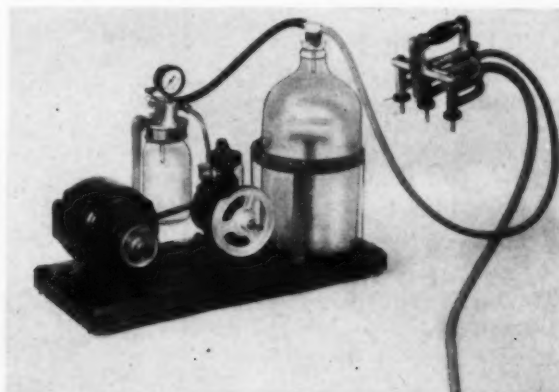
Powder Mixer

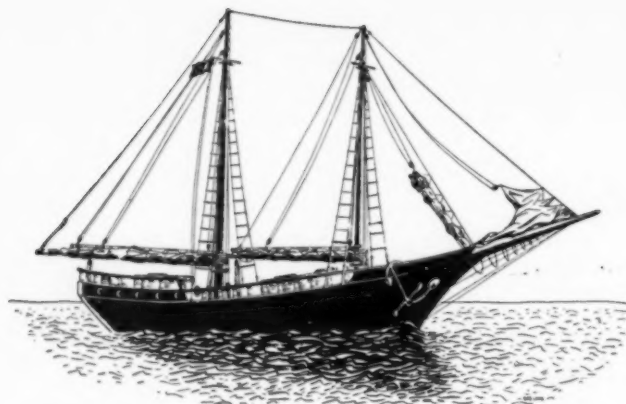
BROWER Manufacturing Co., Quincy, Ill., has over 7,000 of their "Whirlwind Mixers" in operation. This floor level feed mixer has qualifications which recommend it for the fast, easy blending of dry soap powders and detergents. A perfect blend results in less than 15 minutes at a power cost of less than 5c per ton of finished material. Five sizes in capacities of from 700 to 4,000 lbs. may be had. The mixer is sturdily built for long service.

New Scientific Filler

Scientific Filter Co., New York, recently introduced a new, portable vacuum filler for a variety of liquids in small containers. The filler is equipped with adjustable multiple spout filling heads for handling containers of many shapes and sizes. Cracked, chipped or defective containers are automatically rejected without loss of liquid by the vacuum filling arrangements. Change-over from one size of container to another is accomplished

New portable vacuum filler (right) particularly suitable for filling small containers was announced recently by Scientific Filter Co., New York.





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with a minimum loss of time as the machine is self cleaning. No overhead supply tanks are required as the liquid is picked up by vacuum from a storage container situated underneath the filling bench.

New Test Benches

Fisher Scientific Co., Pittsburgh, recently announced the availability of 18 different test benches for use at test stations in soap, sanitary chemical and proprietary chemical plants. The benches are available in any length and are constructed by joining prefabricated steel units. The company also announced that it has developed a new forced draft "Iso-temp" oven for general laboratory use which is said to perform drying operations in one-half to one-third the time required for gravity type ovens.

Writes on Essential Oils

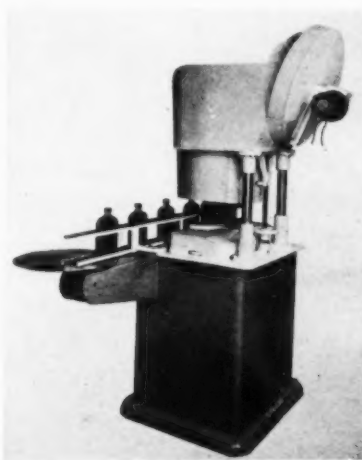
A concise summary of the technology of essential oils has been written by Dr. Y. R. Naves of the research staff of L. Givaudan & Cie., Geneva, and associate of the University of Geneva, and was published recently by Masson et Cie., in Paris. The material, entitled "Huiles Essentielles," forms an eighty-page section of volume XVI of *Traité du Chimie Organique*, which is edited under the direction of V. Grignard, G. Dupont and R. Locquin.

The author addresses his book to organic chemists and devotes himself to acquainting them with the highlights of the origin, manufacture, and use of essential oils. Starting with the definition of an essential oil, the book includes material on the origin of the oil and its role in the plant, its application to perfumery, manufacturing processes, isolation of constituents, analysis, economic data and tabular material on important commercial oils. Numerous bibliographical references are offered.

Dr. Naves is well-known as author of "Natural Perfume Materials" and of several hundred scientific papers on essential oils and their constituents, and has done noteworthy original work on nerolidol, farnesol, and irone in recent years.

Tite-Cap Improves Capper

A number of improvements in the "Tite-Cap" automatic screw capper manufactured by Tite-Cap Ma-



New Improved "Tite-Cap" Capper

chine Co., New York, were announced recently by the company. Mounting of parts is simplified by welded sheet metal fabrication which is said to result in elimination of vibration and a considerable reduction in weight. Doors at the front and rear provide access to the motor and drive unit as well as to the other operating parts.

The new design is said to make it easier to install rotating transfer disks at either intake or discharge and for handling odd shaped containers or for operating the capper at right angles to other bottling equipment. Change-over parts for the capper have been re-designed and simplified in order that changes from one container to another may be made in about ten minutes.

Improved Solutionizers

Improved automatic solutionizers of stainless steel to hold detergents were announced recently by Independent Specialties, Chicago. The solutionizers are produced in three sizes to meet the requirements of popular dishwashing machines. Capacities range from 3 to 5 quarts. Valves on the solutionizers are adjustable to allow fresh incoming water to be bypassed to the cross tubes which empty on to the detergent forming a solution which immediately flows to the wash

tank. After adjusting the valves so that the wash solution contains the desired alkalinity no further attention is necessary except to replace the detergent as consumed, the company announced.

New features include positioning of the cross tubes slightly above the tanks to comply with the safety regulations of some states, simplified mounting and operating mechanism and adjustable controls.

A folder describing the new line is available on request.

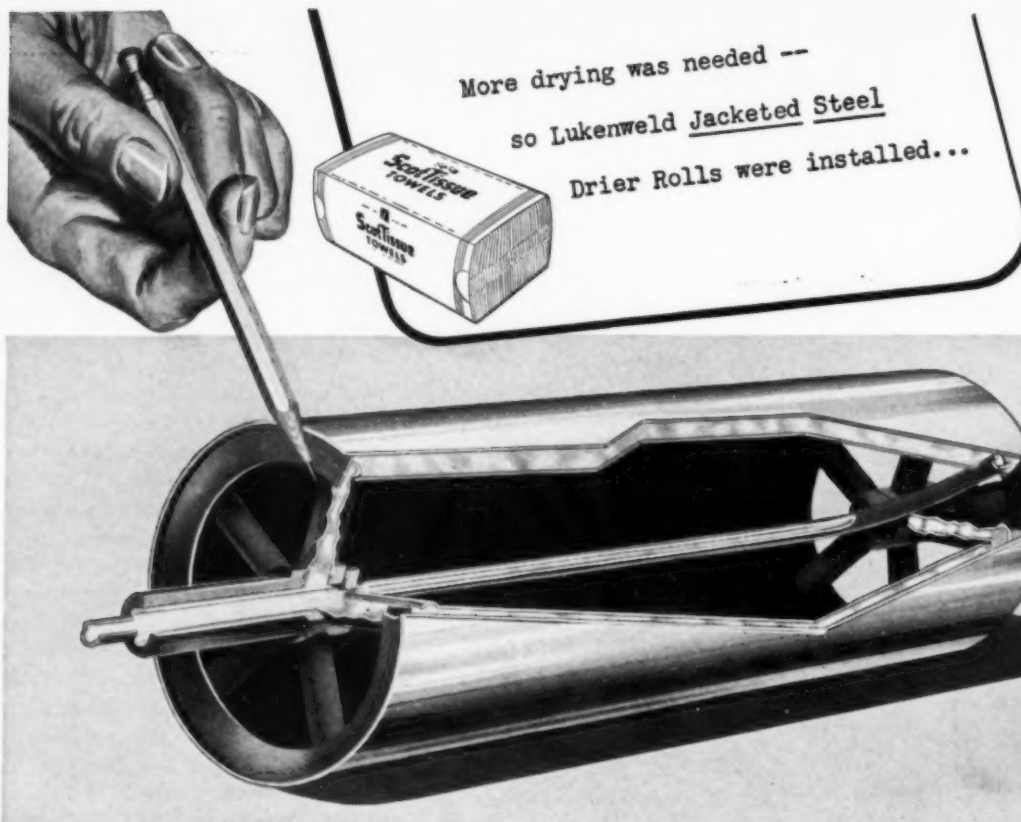
New Pipe Leak Tester

American Pipe & Steel Corp., Alhambra, Calif., currently is marketing a device for locating leaks in pipes, tanks and other storage vessels. The instrument, known as the American Vacuum Seam Tester, operates on a simple vacuum principle. Seams of the pipe or other object to be tested are covered with soap suds and an inspection box, with a glass top and soft rubber base, is laid over the seam. A vacuum created within the box draws air through any leaks, causing formation of soap bubbles which are visible through the glass top. The testers are available in a variety of sizes and shapes for inside corners, outside corners, circumferential seams and straight seams.

Schimmel Issues '46 Report

The 1946 annual Schimmel report on essential oils, aromatic chemicals and related materials was issued recently by Schimmel & Co., New York. Developments in the field of aromatics throughout 1946 are covered in the 142 page report, which is divided into three sections: "Essential Oils and Related Materials"; "Aromatics and Related Materials"; "Statistical Notes." The section on essential oils is in two parts: "Commercial and Scientific Developments" and "Miscellaneous." In the latter are covered: Methods of analysis, analytical standards and constants, pharmacology of essential oils and aromatics, biogenesis of perfume materials, and miscellaneous industrial products. Scientific research in the fields of aromatics and related products is covered in the sec-

(Turn to Page 90)



Towel machine at SCOTT PAPER COMPANY reaches an acceptable production rate faster...*with safety*

When engineers at Scott Paper Company required extra drying capacity on a paper towel machine, they installed a number of Lukenweld Jacketed Steel Drier Rolls in the machine.

The needed drying was thus supplied, with an extra dividend of safety due to the welded steel construction of these rolls. They contributed to the successful start-up of the machine and the early attainment of an acceptable rate of production.

Lukenweld Drier Rolls owe their performance to these factors: Their jacketed design gives positive scavenging of entrapped air, film and condensate from steam passages, assuring high

efficiency. Made of steel plate, wall sections can be thinner with safety, giving rapid heat transfer, with even and constant surface temperatures.

Whatever your roll-drying problems, Lukenweld can serve you. Our engineers will help select the rolls you need, and even design and build the complete machine. Pressures up to 350 psi and higher can be safely employed.

Bulletin 358 tells you more about Lukenweld Jacketed Steel Drier Rolls. For a copy, and for help on your machinery requirements write Lukenweld, Division of Lukens Steel Company, 446 Lukens Building, Coatesville, Pa.



DESIGNERS, ENGINEERS AND MANUFACTURERS OF MACHINERY

PRODUCTS AND PROCESSES

Heavy-duty Cleanser

Mineral oil is emulsified by an aqueous alkaline extract of peat. The emulsification is carried out in the presence of kaolin and pumice or in the presence of kaolin, pumice, cresol, and an added quantity of potash. S. F. Yavorskaya, U.S.S.R. Patent No. 67,688; through *Chem. Abs.*

Purifying Glycerine

Alcoholic solutions of glycerine which are obtained by saponifying glycerides and which contain soaps and esters as impurities, are purified by adding an acid, such as sulfuric, in a quantity sufficient to split the soaps. The fatty acids and esters are extracted with a solvent in which the glycerol and the alcohol used in the saponification are difficultly soluble. Suitable solvents are aliphatic hydrocarbons and chlorinated hydrocarbons such as trichloroethylene. J. K. O. H. Holmberg, Swedish Patent No. 120,962.

Improving Detergents

The addition of alkyl aryl sulfonate wetting agents to alkalies used as detergents, produced improved washing and rinsing results, better foil label removal from bottles, and increased microbial kill, regardless of the hardness of the water used. Scale formation by hard water was diminished. R. I. Temney, *Food Inds.* 21, 159-63, 288-9 (1949).

Saponification Process

An ester of a fatty acid with a mono- or polyhydric alcohol is saponified with caustic alkali at a temperature which is above the melting point of the ester used, and above the boiling point of the alcohol contained in the ester. Saponification is carried out in the presence of such quantity of water or aqueous alcohol that the soap is obtained directly in a form which can be broken down into crumbs. The caustic alkali is

added in solid form or in concentrated solution. Where a high-boiling alcohol is present in the fatty ester, the saponification takes place under reduced pressure. J. K. O. H. Holmberg, Swedish Patent No. 120,961.

Petroleum Based Detergent

Benzene is alkylated with an olefinic fraction boiling at 160-240°C. From this a fraction boiling at 265-350°C. is separated by distillation. The separated fraction is sulfonated and the sulfonate neutralized to give a synthetic detergent. A light-colored product free from tackiness is obtained. B. S. Friedman and G. L. Hervert, to Universal Oil Products Co. U. S. Patent No. 2,456,119.

Soap With Solvent

A soap made with solvent may contain 10-20 per cent of the following mixture; Toluene 50-65, benzene 28-38, gasoline 3-10, benzyl and butyl acetate 1-3 per cent. Ind. Saponi Affini Milano (ISAM). Italian Patent No. 421,586.

Upgrading Fatty Acids

Fat stock having at least 5 per cent of free acid is caused to react with an alcohol by use of an acid catalyst, until the free acid is reduced to 3 per cent or less. Then an alkaline catalyst is used. The esters formed are distilled and yield high-grade fatty acids. Lever Brothers & Unilever Ltd. British Patent No. 612,667.

Non-ionics from Paraffin

Non-ionic synthetic detergents were prepared by reacting an optimum quantity of ethylene oxide with the composite crude fatty acids made by the air oxidation of low-melting, chemical-grade paraffin wax. At 0.2 per cent this detergent compared favorably in washing action with other nonionics made by condensing

ethylene oxide with (1) octyl phenol, and (2) dodecyl mercaptan. Like the other detergents mentioned, the new non-ionic was more effective in washing wool than in washing cotton. In washing wool, the detergent can be effectively built with 60 per cent of sodium sulfate. In washing cotton, added sodium sulfate acts merely as a diluent for the detergent. However, about 50 per cent improvement in detergency is obtained in washing cotton, by replacing one-third of the sodium sulfate with sodium tripolyphosphate.

The amount of suds formed by the new detergent was small and not very lasting. W. K. Griesinger, J. A. Nevison, and G. A. Gallagher, *J. Am. Oil Chemists' Soc.* 26, 241-4 (1949).

Bleaching Dark Grease

Dark-colored fats or greases high in free fatty acids are bleached by the combined action of an acidic phosphorus compound and an inorganic silicon compound, by blowing with air. For example a tallow initially too dark for color reading, was agitated with a slurry made from 5 per cent of metasilicic acid, 10 per cent water, and 1 per cent of 85 per cent orthophosphoric acid. These percentages were based on the weight of tallow. The mixture was blown with air for two hours at 65°C., the sludge was withdrawn, the partly bleached tallow was washed with hot water, dried, and treated with 5 per cent of activated earth for 15 minutes at 105°C. After filtration the color was 9.8 red-50 yellow. A soap from this tallow, treated for 30 minutes with 0.3 per cent of sodium hyposulfite gave after acidification, fatty acids with a color of 6 red-50 yellow. Lever Brothers & Unilever Ltd. British Patent No. 612,169.

Fatty Acid Concentration

Fatty acids or their salts are precipitated from dilute solutions by silver nitrate. After filtration the precipitate is treated with nitric acid to free the acids and for recycling of the silver nitrate. F. Naldi, Italian Patent No. 422,326.

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By John W. McCutcheon

ONE of the most valued contributions of modern technology to making the housewife's lot easier is the automatic home laundry. Nothing but praise is heard for such equipment, particularly by the older women, who can remember the days when the zinc covered wash board was standard equipment in every household. Even the men like to stand around and hear the little relays click on and off their cycles, and to marvel at man's ingenuity that, for all practical purposes, can make such a device fool proof. Outside of a few casual inquiries regarding the general principles of washing and a sincere desire to get a cleaning agent which would not foam, it would appear that the detergent manufacturer was not taken behind the scenes in the development of washing machines. Actually such equipment leaves a great deal to be desired from a purely scientific approach. This is indicated by the fact that one large manufacturer of such equipment has made an about face on his product and is now putting on the market a radically different product.

One question that arises is, are the machines designed for the use of synthetic detergents or soap? Attempts have been made by manufacturers to recommend certain products for their machines. The ones noted to date have been mostly synthetics, designed to prevent undue foaming. Recently, however, there has been a tendency to minimize these special products and to use what the detergent market has to offer regardless of whether or not the product foams. In the instructions laid down for the operation of at least one automatic laundering machine, the bleach is added with the soap at the beginning of the operation. Obviously, this is not ideal laundry practice, but a compromise to satisfy the simplicity of machine design. If

automatic cycles can be set up to pump water in and out, and to regulate its temperature, it does seem pos-



sible to add a few extra valves so that the addition of the bleach will take place after the first rinse. Sequestering agents might be added automatically, a blue-sour given, or the unit might even contain a water softening unit of sufficient size to handle the first and second rinses. Actually, such a water softening device is on the market and retails for less than \$50. Perhaps a deluxe model of washing machine as envisioned above, may be the standard model of a few years hence.

One point in laundry work that appears commonly overlooked is the fact that most lime soap deposits form on the clothes in the rinses and not in the sudsing operation. If machines were designed along the lines suggested above, then perhaps the hexametaphosphates and the amino sodium carboxylates would come into their own as sequestering agents and would be found on every grocer's shelf.

THE price structure of synthetic detergents over the past several years has remained fairly constant. Due to the variation in percentage of

active material, types and number, it has been difficult to get a comparative price value. The following compromise listing on a select and representative group of a few dozen products manufactured by about fifteen companies, is an attempt to put price trends in a concrete form. Nov. 1947 prices are given an index of 100. On this basis, July 1949 prices are as follows:

	July 1949
Non-ionic detergents, non-fat base	91.1
Non-ionic emulsifiers, fat base ..	92.7
Anionic detergents, fat base	100.0
Anionic detergents and wetting agents, non-fat base	99.0
Weighted average*	95.9
*Weighted from number of samples selected.	

APHILANTHROPIST may properly be expected to follow the advice: "let not thy left hand know what thy right hand doeth." This would not be good advice however for an industrial concern these days, and yet there is some evidence for it. Recently, a list of detergent compounds was sent to a large company for comment. Back came the reply, everything is O.K. except item so and so. Take it off the list. We never heard of it and don't make it. At the time this letter was received a one pound sample of the product bearing the company's label was standing on the writer's sample table. Another conversation with a member of the sales force of a large company revealed similar confusion as to whether they did or did not make a particular product. Only after the matter was checked with a higher official was it finally decided that the firm did make the product. These are extreme cases to be sure, but they do point out the necessity of overhauling the machinery by which information is disseminated throughout any large organization.

ARE we running out of names for detergents? No fewer than twelve products by eight companies have products named "Detergent." They are:

Detergent D-40,
D-60, Slurry Oronite Chemical Co.
Detergent, M, D Ciba Co.
Detergent MXP Monsanto Chem. Co.

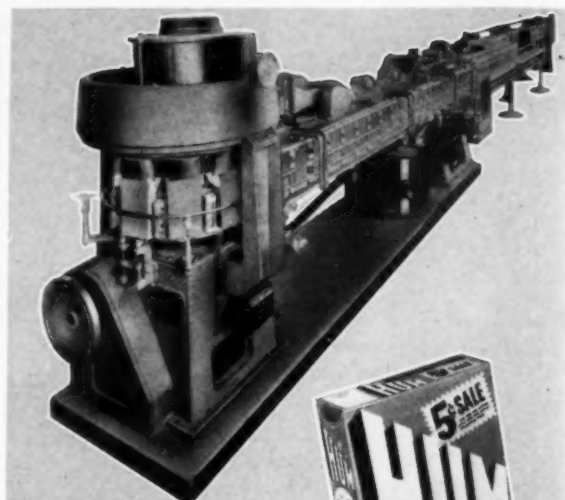
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Detergent Sanitizer Conc. Onyx Oil & Chem. Co.
 Detergent T-12 Victor Chem. Works
 Detergent 31, 35, 85 Lehigh Chem. Co.
 Detergent 77 Peck's Products Co.
 Detergent 240 Arnold, Hoffman & Co.

EQUIPMENT is usually designed originally for a certain specific use. That other uses appear is often incidental. Sometimes the incidental uses far exceed the original, and change the whole manufacturing outlook. The present changes going on in the soap industry make it necessary to review frequently equipment which may have possible new applications. We have mentioned previously in these columns the use of continuous centrifuges for various separations. The Bird and the Sharples superhydrator separate liquids and solids very well, although differing in fundamental principles. The Sharples continuous liquid-liquid separator has been mentioned in connection with the Sharples Continuous Soap Process. The De Laval separator, although designed primarily for liquid-liquid separations where the solid content is low, and used to some extent in oil refining, deserves some attention. The design feature which differentiates it from other centrifuges is the disc structure of the rotator which splits the incoming fluid into a large number of thin layers. The short path over which the separating liquids have to travel improves the rate of separation for the speed of rotation. The net result is efficient work at low speeds. This type centrifuge might prove of some interest in continuous sulfonation processes, etc.

DURING the war, the German detergent industry found that abietanol from rosin, condensed with 35-40 moles of ethylene oxide gave a product exceptionally well suited to the emulsification of fatty acids in the textile trade. It is believed that a product of similar base nature may soon be made available in America.

EXPANSION of "Teepol" manufacture to Holland from England, where the product obtained its start, has been accomplished through the Dutch subsidiary of the Shell Oil Co. Ltd., London. The plant will have a capacity of about 100 million lbs. per year.

New Pike Magnifier

A new "Flash-O-Lens" illuminated magnifier with a knurled pinion which adjusts a 20 or 40 power tube was announced last month by E. W. Pike & Co., Elizabeth, N. J. The instrument which is adjustable to the user's visual needs, is said to be useful for examining chemicals and other products which require inspection through illuminated magnification.

Issues Booklet On Glycols

Uses and properties of eight new glycols are described in a new eight-page booklet, "Higher Diols" published by Carbide and Carbon Chemicals Corp., New York. Specific glycols described include butanediol-1, 3; pentanediol-2,4; the two six-carbon diols, 2-methyl-pentanediol-2,4 and hexane-2,5; heptanediol-2,4; ethylhexanediol; and two new substituted 1,5-pentanediols. The booklet gives physical properties for the higher diols, comparing them to the lower 2- and 3-carbon glycols and glycerol. Uses have been tabulated by product and industry.

The new higher diols readily from diesters which are important as emulsifying agents, plasticizers and resins. A primary hydroxyl group usually is more reactive than a secondary. Copies of the booklet may be obtained from the company by requesting Form 6719.

New Locking Faucet

A new faucet which features a lock-lever which can be padlocked was announced recently by Foster Aluminum Alloy Products Corp., Forestville, N. Y. The faucet is made in three-quarter inch size to fit all standard metal drums or barrels and is said to be particularly useful in application to inflammable products as it is made of spark-proof aluminum alloy.

New Oil Spectrophotometer

The "Coleman Model 6B Junior Spectrophotometer," adopted recently by the American Oil Chemists Society for the determination of oil color, is now available calibrated in accordance with the recommendations and requirements of the A.O.C.S. method, it was

announced recently by Coleman Instrument, Inc., Maywood, Ill.

The company has also recently announced a new photo-electric "Colorimeter." The new instrument is a filter colorimeter which features a taut-suspension Galvanometer; dual capability of direct deflection reading and potentiometric balance; removable and interchangeable scale panels, wide choice of curveter and rigidly mounted optical filters.

New Kiefer Folder

A new folder describing the company's synchronized cleaner, filler, capper and conveyor was issued recently by Karl Kiefer Machine Co., Cincinnati. The folder also contains operating data on individual bottle cleaners, and filling machines.

Issues Package Catalog

"Close-Ups of Successful Corrugated Boxes" is the title of a new loose-leaf catalog in color currently being distributed by Hinde & Dauch Paper Co., Sandusky, O. The catalog demonstrates ways in which corrugated board has been put to use for improving packaging and increasing sales.

New Precision Stills

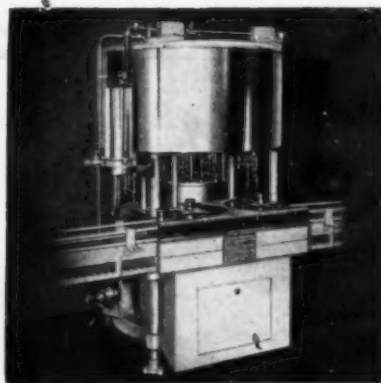
Precision Scientific Co., Chicago, recently announced the development of several new "Streamliner" model laboratory water stills which are made of polished stainless steel and which are constructed in three offset sections with vapor-tight sliding joints. Electric, gas, and steam-heated models are available in capacities of from one to four gallons per hour.

New Safety Step Ladder

A new, mobile step ladder mounted on ball bearing castors that is temporarily locked into position when the ladder is stepped on by means of rubber tipped legs coming in contact with the floor was announced recently by Ballymore Co., Bryn Mawr, Pa. Ladders are made in standard sizes of one to six steps out of aluminum finished steel. Handrails are optional on safety ladders having from three to six steps. The frame of the ladders is three-quarter inch steel tubing.

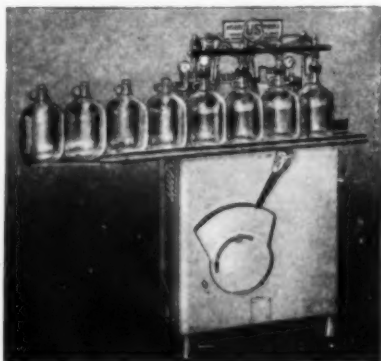
LOWEST FILLING COSTS KNOWN TO INDUSTRY

These U. S. Bottlers' filling units embody production improvements resulting from constant on-the-job research. All three units are built to standards of perfection that have made U. S. Bottlers' a symbol of dependable performance throughout the world.



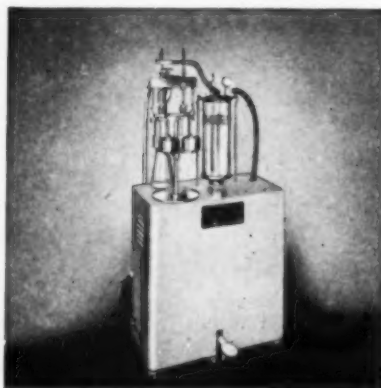
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The most widely used automatic filler. Designed for high speed production lines. Built in five sizes for containers up to and including gallons. Has worthwhile advancements and extensive engineering innovations for dependable, uninterrupted production.



THE NEW SEMI-AUTOMATIC STRAIGHT-LINE VACUUM FILLER

Model B-49 is a versatile machine for filling liquids and semi-liquids. Quick change-over for any container sizes up to and including gallons. New mechanical and automatic innovations.



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50c for each copy desired to
Lancaster, Allwine & Rommel.

No. 2,472,298, Cleaning, Penetrating, and Corrosion Loosening Composition, patented June 7, 1949, by Charles A. Jensen, Buffalo, N. Y. A cleansing, penetrating and corrosion loosening composition is patented consisting essentially of phosphorus trichloride and a liquid petroleum hy-

drocarbon consisting essentially of lubricating oil and kerosene in the approximate proportions of 25 per cent of lubricating oil and 75 per cent of kerosene, said phosphorus trichloride and liquid petroleum hydrocarbon being in the approximate proportion of 0.3 to 1.0 gram-atoms of chlorine to one liter of the composition.

No. 2,472,847, Fungicidal Lacquer, patented June 14, 1949, by Walter S. Osborne, Sumter, S. C. A fungus-inhibiting lacquer is covered comprising a substantial proportion of a fungicide consisting of 5-95 per cent by weight of ortho-cresyl-azo-diamino benzene hydrochloride, and 5-95 per cent by weight of tetra-bromo-ortho-cresol and a larger proportion of clear lacquer.

No. 2,473,154, Production of Soap From Hydrogenated Vegetable Oils, patented June 14, 1949, by Willy Lange and Robert G. Folzenlogen, Cincinnati, O., assignors to Procter & Gamble Company, Ivorydale, O., a corporation of Ohio. The patent describes

the process of preparing soap from a vegetable oil containing gamma tocopherol which comprises treating the vegetable oil with hydrogen gas in the presence of a metallic hydrogenating catalyst and a hydroperoxide of the formula $R-O-O-H$ wherein R is selected from the group consisting of hydrogen and an organic radical, under conditions which produce a reduction of the iodine value of the oil, and saponifying the hydrogenated oil, the amount of hydroperoxide present during hydrogenation being sufficient to inhibit the formation of gamma tocopherol orthoquinone but not substantially more than 0.5 per cent based on the weight of the oil.

No. 2,473,530, Process of Making Bar Soap With Ingrained Emblem, patented June 21, 1949, by Alvin H. Knoll, Cincinnati, O., assignor to Procter & Gamble Company, Cincinnati, O., a corporation of Ohio. A process of making bar soap is described having an ingrained emblem which includes preparing a mass of soap which is at least partially in the neat soap phase, is in a flowable condition and capable of flowing together and reuniting when divided, and while said soap mass is in said condition, causing it to flow through a grid having elements coacting to form an emblem occupying a substantial surface area of a bar to

Now- VERTICAL 3-ROLL SOAP MILLS by LEHMANN

Now, two new and versatile LEHMANN Mills are available admirably suited to the varied requirements of both the small and large producer of toilet soaps. These mills, 813-SA and 913-SA, are specifically designed to reduce costs in batch production and as important complements to other LEHMANN Mills in large scale continuous production. For dependable high production, low maintenance cost and long life LEHMANN precision built machines are unbeatable. Send now for detailed specifications on these two mills.

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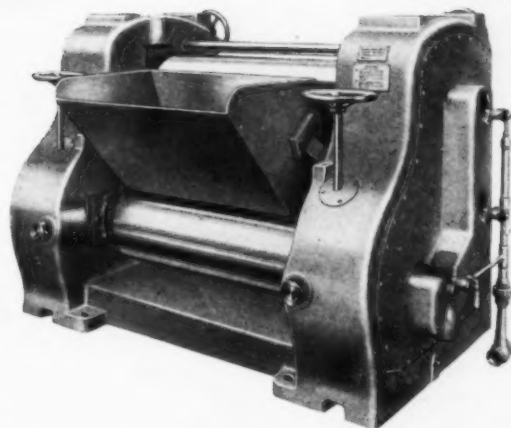
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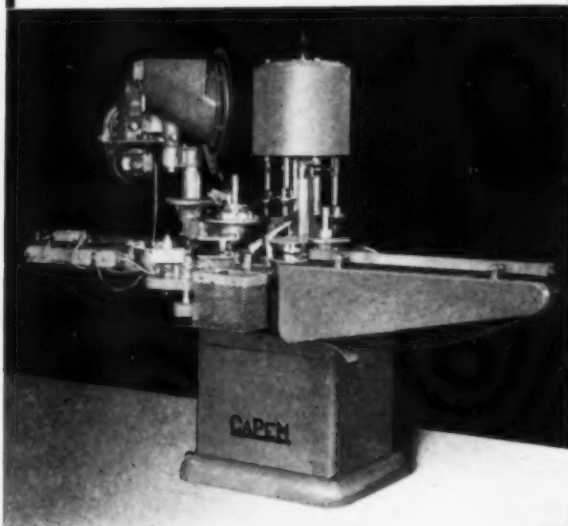
- If you have not already done so ask us for complete information on the important engineering advance embodied in the new LEHMANN CDM (Centrifugally - cast Dual Metal) ROLLS.

August, 1949

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(Inactivates Trivalent Iron)

VERSENE Fe-3* does more than soften water. It actually inactivates troublesome trivalent iron as well as calcium, magnesium and other metallic salts. Until VERSENE Fe-3 was developed there was no really satisfactory sequestering or chelating agent for ferric iron.

At pH7, 10 cc of VERSENE Fe-3 sequesters 167 mg. of ferric iron plus 158 mg. of calcium. At this pH it is nearly 10 times more effective in sequestering trivalent iron than at pH12. Maximum effectiveness on alkaline earth ions is at about pH9 and a further increase in pH has little additional effect.



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Regular VERSENE is an exceptionally versatile product for the Soap Industry. It is chemically known as Ethylene diamine tetra acetic acid tetra sodium salt. Versene does the following things with great effectiveness.

SOFTENS WATER . . . without the formation of precipitates. It forms soluble non-ionic compounds with alkaline earth and other ions such as ferrous ions which cause hardness in water. VERSENE is the only sequestering agent that can be manufactured into soap and remain in it as a water softener without decomposition.

CLARIFIES LIQUID SOAP . . . increases foam and rinsability. Eliminates precipitates by removing interfering metal ions through formation of inactive and stable complexes of VERSENE.

ANTI-OXIDANT . . . for fats, oils, soaps, fatty acids, and other organic materials. Minute amounts of VERSENE act as a preservative and prevent rancidity.

DISSOLVES GREASE AND FOOD DEPOSITS . . . acts as a buffering agent. Saponifies fats. "Solubilizes" and partly hydrolyzes proteins. Provides two-way cleansing action.

PURIFIES ORGANIC MATERIALS . . . Organic materials contaminated with metals may be purified by the addition of small quantities of VERSENE. The offending metals are complexed and their ion activity reduced. The complex compound may in most cases be easily removed from the organic material thus insuring a higher grade product.

Regular VERSENE is available either as a pale, straw-colored aqueous solution or as a dry, white powder.

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Framingham, Massachusetts

be formed of said mass, allowing the soap to flow together beyond said grid and without essentially disturbing the pattern thus created in the mass, cooling the soap until it is fully solidified and cutting it into individual bars.

No. 2,473,798, Nonionic Surface Active Agent, patented June 21, 1949, by Roy H. Kienie, Bound Brook, and Gordon P. Whitcomb, Watchung, N. J., assigns to American Cyanamid Company, New York, N. Y., a corporation of Maine. The patent covers a stable emulsion of water and synthetic resin which includes, as a non-ionic emulsifying agent, an ester of a dicarboxylic acid of the alicyclic series obtained by the heat dimerization of poly-unsaturated long chain fatty acids with a polymerization product of an alkylene oxide of 2 to 3 carbon atoms having a molecular weight of from 300 to 6000.

No. 2,473,822, Water Softening Detergent and Method of Making Same, patented June 21, 1949, by Edward A. Robinson, Pittsburgh, Pa., assignor to Diamond Alkali Company, Cleveland, O., a corporation of Delaware. A stable water softening detergent material consisting essentially of a mixture of an alkali metal polyphosphate is covered in which the ratio of alkali metal oxide to phosphorus pentoxide is 3:2 or less, said polyphosphate being coated substantially en-

tirely with a material chosen from the group of alkali metal carbonates and alkali metal non-polyphosphate phosphates, and alkali metal metasilicate, said polyphosphate and said metasilicate being maintained substantially out of contact with each other in said mixture by said material.

No. 2,474,412, Soapless-Germicidally Active Detergent, patented June 28, 1949, by Frederick C. Bersworth, Verona, N. J. A germicidally active detergent composition for use in water containing water hardening constituents is described, said composition consisting of a mixture containing 10 to 30 per cent of an alkali metal salt of ethylene diamine tetraacetic acid and from small amounts up to 25 per cent of a quaternary ammonium salt of ethylene diamine tetraacetic acid, the quaternary ammonium cation of said salt being germicidally active, balance consisting of simple alkali metal detergent salts of the group consisting of phosphates, carbonates, silicates, borates, sulfates and mixtures thereof.

No. 2,473,880, Cleaning Metal Catalysts With Alcoholic Caustic Solution, patented June 21, 1949, by Marion H. Gwynn, Mountain Lakes, N. J., assignor to Allied Chemical & Dye Corporation, New York, N. Y., a corporation of New York. The patent

describes the process of removing from cages of spent hydrogenation catalyst of the group consisting of nickel catalyst, copper catalyst and cobalt catalyst, resinous material deposited on the catalyst while catalyzing a reaction of the group consisting of hydrogenation, dehydrogenation, hydrofing, disproportionation and desulfurization of organic compounds containing oxygen in the molecule, which comprises immersing the cages of resin-contaminated catalyst in a solution of caustic soda in ethylene glycol at a temperature within the range of 150° to 300° C., said solution containing from 1 per cent to 20 per cent by weight of caustic soda, and then washing the catalyst with water.

No. 2,473,930, Process for Bleaching Glyceridic Esters, patented June 21, 1949, by Eric R. Woodward, New York, N. Y., assignor to Mathieson Chemical Corporation, a corporation of Virginia. A process for improving the color of glyceridic esters of long chain fatty acids containing minor proportions of free fatty acids is covered which comprises intimately dispersing a dry mixture of chlorine dioxide and an inert gas through the fatty material while the latter is at a temperature at which it is fluid, is substantially dry and free from mineral acidity, the fatty acid content of the fatty material not exceeding 10 per cent by weight.

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Rose
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Schimmel Report

(From Page 79)

tion on aromatics and under the "Statistical Notes" heading are the bibliography and index.

The book is sprinkled with illustrations of scenes dealing with the gathering and sources of essential oil materials.

New developments covered include the discovery that the essential oil distilled from wild cloves in the Moluccas is different in composition from commercial clove oil, which is produced from clove buds from cultivated trees. The wild clove oil con-

tains no eugenol and deposited crystalline substances not found in ordinary clove oil.

One section is devoted to discussion of skin-irritating properties of some essential oils.

In the field of organic synthesis a new group of perfume materials having intense floral odors was discovered in the ethers derived from dicyclopentadiene.

The Report is available in the U. S. for \$3; elsewhere \$3.25.

Guy G. Fox Dies

Guy Gore Fox, 68, a vice-president of Armour & Co., died re-

cently at Chattanooga, Tenn., following a brief illness. Mr. Fox joined Armour in 1901 as an assistant chemist. In 1941, he became vice president in charge of the fats and oils division. He was a charter member and a past president of the American Oil Chemists Society, and also active in other professional organizations. During World War II he served on the advisory fats and oils committee of the War Production Board. He is survived by a daughter, Harriet.

Detrex Advances Two

Detrex Corp., Detroit, recently announced the appointment of R. A. Emmett, Jr., as assistant to the general manager to supervise material control, production scheduling, inspection, and safety. J. Doyle Hamacher has been named superintendent of the equipment manufacturing plant and also will retain his previous duties as company plant engineer.

At the same time, Hooker-Detrex, Inc., which is owned jointly by Hooker Electrochemical Co., Niagara Falls, New York, and the Detrex Corp., announced that a new plant is to be built in Ashtabula, O., to manufacture trichlorethylene, one of the major uses of which is for metal degreasing. It is employed also for the extraction of fats and oils from vegetable and animal products.

Construction of the new plant which will cost in excess of 1½ million dollars is to start immediately and it is expected to be in operation early in 1950. H. D. McKinley, appointed works manager of the new plant, collaborated in the design, erection and operation of the Tacoma, Wash. plant of the company. He is transferring from his position as manager of the solvents division of Detrex Corp.

Wool Fat Treatment

Soaps containing organic unsaponifiable matter, such as that present in wool fat, have been saponified in an autoclave under 10 atmospheres' pressure, and are freed from the unsaponifiable matter by drying and extracting with anhydrous acetone. Giacomo Bottaro, Italian Patent No. 421,631.

Synthetic Detergents in the Fish Industry

THE use of detergents and wetting agents is of great value in maintaining sanitary conditions in the fishing industry, John D. Kaylor, technologist of the sea foods division of General Foods Corp., Boston, declared in a recent talk at the convention of the National Fisheries Institute in Chicago. They should not be relied on to supplant hot water and elbow grease in scrubbing all equipment that comes in contact with food, he added.

There are many proprietary compounds available at reasonable cost and tailored to specific cleaning jobs, Mr. Kaylor continued. Describing their general characteristics, he listed seven as particularly desirable. They are: Penetrating, or wetting action, which loosens soil; good rinsability; a high degree of dispersing or deflocculating power; good emulsifying properties for oily and fatty deposits; dissolving and neutralizing power over sticky deposits, such as fats, so as to make them soluble in water; low corrosiveness on metal and other surfaces; and water conditioning properties where hard water is used.

"Manifestly no one detergent is so all inclusive," he went on, "that it would be satisfactory in a plant producing fatty or oily products, such as tuna and sardines, and an ordinary fillet plant. For most fishery plants, per-

haps the best all-round detergents are in the sulfonic acid and sulfuric ester groups.

"It is also highly desirable that detergents possess some germicidal properties. Consultation with any of the larger and more reliable chemical concerns will pay dividends. One word of caution, however, is in order. Don't believe every word the salesman tells you. Examine the literature to be certain that his verbal claims are substantiated by the printed material."

Chief violators of sanitation in a fish processing plant Mr. Kaylor listed as rats, insects, dirty equipment, polluted water or ice, unfit raw materials and obnoxious personal habits of food handlers. Rats, he declared, are the worst offenders, and outlined in some detail measures for control of rodents and for ratproofing food plants.

The technology unit of the National Fisheries Institute, Mr. Kaylor announced in conclusion, expects shortly to complete work on a sanitary code for the industry. This program, he said, is intended to aid progressive plant operators who have a sincere desire to improve the sanitary phases of their business. All others, he declared would be left "To the tender ministrations of regulatory agencies who know how to persuade them."

SANITARY PRODUCTS

A SECTION OF SOAP

ON the whole, 1949 thus far has not been at all a bad year for household insecticides. Actually, if increased aerosol sales are added to liquid insect spray sales, we believe that it could be considered a good year in the light of pre-war standards. But, there is one feature of this year's insecticide market which differs materially from the booming sales of new DDT products back in 1944-45. This year, dealers did not over-buy and have been moving their insecticides to the consumer in contrast to the gross overloading of the dealer and the stagnated stocks of four or five years ago. The phoney products of the fly-by-nights of 1945 are cleaned out. This year's selling has been led by standard, leading brands intelligently handled which, in turn, should augur well for 1950.



MANY millions of samples of chemicals and specialties are wasted each year through lack of sufficient technical information appearing on the labels. Data may go under separate cover to the prospective purchaser, but, as has been pointed out to us by an experienced chemist, too often the sample and data fail to reach the laboratory together where they might be examined. Technical literature, like no end of circular mail pieces, may and can end up in the waste basket. It may or may not reach the right person at the discretion of an office boy or girl who is in no position to judge its importance.

The suggestion has been made that a complete summary of technical data regarding new products should appear on the label or in some way should be inseparably attached to the sample itself so that wherever the sample goes, the data goes with it. Of what use it is for a chemist to

get a sample of a brown liquid marked solely "Gumbo No. 666?" He doesn't know whether it is a sample of detergent or a soft drink concentrate,—and cares less if the technical data never reaches him. We feel that this is a point which many sample senders overlook and one which might receive more attention in the interest of preventing waste and improving sampling technique.



AS prices have declined and stocks of most everything in and around the chemical field have become more plentiful, we find general conditions of competition just about back on a pre-war basis. No longer are there fears that this or that raw material will go off the market overnight. No longer are large stockpiles deemed necessary. To the contrary, sentiment seems to have swung sharply to the other side. As in any declining market, all emphasis has been on reducing inventories, especially raw material inventories. As a consequence, today many manufacturers find their supplies of raw materials at low ebb.

Certain raw materials for the disinfectant and insecticide industries have dropped rather sharply over the past six months. Others which had declined previously have shown a tendency to tighten up. Price declines may go further. Who knows? Heavier imports of some materials may intensify competition. But, looking over the entire list of raw materials, it is our belief that buying can be undertaken today on a far safer basis than a year ago. In fact, the market for some items could reverse itself quickly. Perhaps, it has become the part of wisdom not to wait out declines to the last penny, but to begin replenishing inventories on a conservative basis.

AEROSOLS...

Insecticidal Aerosols

By A. C. Miller

Gulf Oil Corp.

THE insecticidal aerosol is new by comparison with the "liquid" and "dust" forms. If it is to have a long and successful span of life, it will have to be built on a firm foundation. To prosper, aerosol manufacturers and distributors should follow the fundamental basic principles that apply to the conduct of any successful business.

There have been too many exaggerated claims made for aerosols, that would be difficult to justify and impossible to prove. All manufacturers should be vitally interested in maintaining the quality of their products and in giving good specific directions for the recommended uses on the containers; they should also use only factual statements in their advertising.

The additional progress of the insecticidal aerosol business will depend largely upon consumer satisfaction, and this satisfaction will result from the performance of the bomb in consideration of the claims made for it.

If manufacturers persist in making exaggerated claims for their products, consumers are going to be disappointed not only in the particular bomb that they use, but with the aerosol method in general.

The insecticidal aerosol is still in the category of what we might term the "carriage trade" business. Without doubt, it is easy and convenient to use, but it would be extremely difficult to prove that it is any more efficient and economical for a majority of uses to which it is actually put

than a good liquid insecticide.

Some informed sources believe that the liquid household insecticide business is still substantially larger than the insecticidal aerosol business. If a business recession should occur, probably more people will revert to liquids—due to their lower initial cost, and in the opinion of many, their economy of use.

Published statements to the effect that a single insect bomb will replace one or even two gallons of liquid insecticide are misleading and very likely will react not only against their authors but against the aerosol industry as a whole.

Some advertisements have emphasized, yes, over-emphasized the fact that certain bombs not only kill moths but infer that some long-lasting protection may be expected. Yet, when one refers to the ingredient statement and the directions on some of the containers, it turns out that the contents are most efficient as space type insecticides and that, in consideration of the dosages involved, actually little effective residue is left on surfaces to kill moth larvae or moth eggs.

Such phrases as "miracle" or "secret" ingredients have been overdone. Compliance with the labeling provisions of the new Federal Insecticide Act, in fact, eliminates the possibility of "secret" ingredients, since such references are apt to confuse as well as mislead the consumer.

Lack of information may have been responsible for some statements

used in advertising, and this is forgivable, while others may have been due just to carelessness. Statements that are purposely and intentionally exaggerated or misleading are, of course, completely without defense.

When all manufacturers decide to base their claims on the actual performance of their products, consumers will come to know what to expect for the money they spend for insect bombs. They will be satisfied with the results they get and the aerosol business will be on a sound footing.

Our Department of Agriculture friends in Washington always have been and continue to be most helpful in the preparation of labels, and the directions on such labels can be a good guide to the solid claims to be made in later advertising.

It does seem to me that if the insecticidal aerosol industry is to prosper in a buyer's market, all of us in this new business should make up our minds to trim our sails now for the long pull ahead.

We all want to provide our customers with a good product, a formula that will not be only effective for its recommended uses, but one that will be entirely safe, as well as pleasant, to use. In our competitive economy, we all should strive to give the consumer a sound value in consideration of the price that we ask for our respective products.

In our advertising and promotional efforts, we should stress the advantages of the aerosol principle, as well as emphasize those peculiar to our particular product. But we should never mislead the public into believing that they are going to get any service that our product will not in fact deliver.

Surveys show that all too few people are familiar with the convenience and relative economy of the

A symposium discussion of newer applications of the low pressure aerosol method of dispersion based on papers at recent NAIDM meeting.

lightweight low pressure aerosol insect bombs. Our job in our advertising is to win this big field of users to a trial of our products. If our advertis-

ing claims have been sound, trial users will be satisfied with their initial experience and will become steady repeat customers and our industry will grow.

Deodorant Aerosols

By John H. Mills

Manager, Aer-a-sol Products
Bridgeport Brass Company

THE increasing importance of deodorant aerosols in the consumer market is indicated in the program for the mid-year 1949 meeting of the NAIDM in which three papers on this one subject were presented. Mounting interest in the development and growth of the aerosol industry is reflected by national consumer acceptance of these products. This consumer acceptance appears to be the natural outcome of the individual's awareness of the obvious need for aerosols in the home, their ease of application and the almost immediate results obtained in combatting odors.

How should we approach the problem of deodorizing and freshening the air to make life more pleasant for all of us? Patent offices both here and abroad have had many applications for various devices, formulae, and methods, claiming ways and means of deodorizing or freshening air, particularly in confined spaces. It is only in the past few years, however, that the average consumer has been made conscious of eliminating odors through

the advertising of the wick, spray, and aerosol type deodorants.

Let us review some of the methods that have been developed for the control of odor and freshness of the air in indoor areas.

Air-washing has been used in air-conditioning systems by passing the air laden with odorous particles through treated water, glycerine, oils, silica-jell, etc. This has been effective particularly in those buildings that depend on the air-conditioning system for their entire ventilation.

Neutralization. If you have a known odor to be removed, it is possible to eliminate it by injecting into the air another material or chemical to create a reaction and neutralize the foul odor.

Antisepsis. This includes the use of germicides or antiseptics for destroying the micro-organisms of bacteria, fungi and mold. There are effective germicidal materials that can be advantageously used in aerosol dispersion.

Formaldehyde has been used for

this purpose in some of the wick deodorants, in fact, formaldehyde also acts as a mild narcosis of the olfactory nerve that temporarily puts the nose out of action.

Oxidation. This involves the use of various materials that will combine with the unpleasant odors, leaving an inodorous chemical.

Precipitation. A development of fine droplets in the air that will combine with the unpleasant odor and carry it to the floor with eventual complete dissipation.

Masking. This is a process used by many of the so-called deodorants on the market. It involves the overpowering of an existing unpleasant odor with a stronger, pleasant odor. In many cases, a stronger perfume will persist until there has been a complete air change and both the unpleasant and the pleasant odor have been dissipated.

Unknown. Then, there is that unknown reason when a mysterious process takes place that so far, science has been unable to explain, yet there is a cancelling of odors when chemical materials are dispensed in the air in fine particles.

There are undoubtedly many other theories such as alkalization, adsorption, electrolytic action, etc. However, the manufacturers of today are undoubtedly dealing with only a few of the above.

The aerosol deodorant lends itself readily to practically all of the above methods, with the exception of air-washing. A well-designed aerosol, with particle size properly developed, gives quick penetration throughout an average-size room, therefore, if it contains the necessary oxidizing, neutralizing and antiseptic materials, there will be fast action in eliminating or overcoming the unpleasant odor.

Its economy is apparent, for with a well-developed formula and a

properly controlled spray nozzle, less than a second's spray is needed to eliminate most bad odors. There have been some 12-ounce units that contain 600 to 800 applications.

The mere fact that the aerosol lends itself to better types of formulae, also makes it possible for the exploitation of perfumed types of deodorants that temporarily mask the odor.

Perhaps a true test of a good aerosol deodorant is, when properly used, there will be a complete elimination of all odors within seconds after its use. It must be realized, however, that in general, to have an aerosol deodorant act quickly and permanently, the source of the odor must be

removed. When the source cannot be removed, it is suggested that periodic spraying at approximately once every two hours will keep the air fresh and odorless. A number of manufacturers have come out with aerosol deodorants in the past six to ten months. A few of these have the characteristics that will give them consumer acceptance.

Those companies offering a well developed formula, attractively packaged, will unquestionably be able to enjoy a profitable operation if, in addition to the manufacture and sale of a better-than-average deodorant, they contribute to the education of the consuming public by intelligently advertising the advantages of this method of home deodorization.

Spray Wax Aerosols

By E. J. McKernan

Continental Filling Corp.

IF it can be waxed, it can be spray waxed. Spray wax has been used successfully for a number of years. Its chief locale of endeavor has not been in the home, but in industry. One of the many industrial users of spray wax has been the airlines. They not only wax the interior furnishings of their aircraft, but the exterior surfaces as well. This film of wax protects the ship from the effects of weather and also serves to reduce skin drag which results in increased economy of operation. To be able to spray the wax on these huge ships saves a great number of man hours.

Trucking lines, railroads, hotels, and automobile garages also use spray wax. The ability to apply the wax by means of a spray is a great time saver. These industries spray wax wherever its application is required. Hotels use the spray wax on their furniture, marble, bars, venetian blinds, floors of all types, and many other surfaces that need wax protection.

Spray wax has not yet been sold successfully on a large scale to the householder, because of the high

cost of a spray gun required to develop the spraying pressure necessary for application.

If it can be spray waxed it can be aerosol waxed. Spray wax can now be used in the home of Mr. and Mrs. America economically because of the advent of the low pressure aerosol dispenser. In order to incorporate a wax in the low pressure aerosol dispenser, the wax to be used must have the following characteristics:

1. It must be of very fine texture. It must have no lumps or small particles of such a diameter as to block the orifice of the valve. Fine particles are often encountered in waxes.
2. The wax must be miscible with the propellants or at least rendered temporarily miscible, by shaking, for a sufficient length of time to allow a homogenous amount of wax and propellant to be emitted from the dispenser to do the job required.
3. The wax or the wax solvent must have no deteriorating effects upon the container or upon the working

parts of the valve. This corrosion problem can be answered only by storage tests over extended periods.

4. The wax itself must not be affected by the low temperatures. If they do affect the waxing characteristics of the spray wax, it cannot be used, because temperatures of 0°F. are frequently encountered while filling the low pressure aerosol dispenser.

The following are a few of the difficulties that are encountered in preparing a spray wax aerosol dispenser:

1. Lack of proper proportions of wax, wax solvents and propellant necessary to secure a spray that will do the job required in the dispensers on hand, and still conform to I.C.C. regulations in regard to pressure.
2. Inability to secure a solvent for the wax to act as a suitable vehicle to carry the wax to the surface to be coated. This solvent should not be excessively volatile, evaporating from the wax before it hits the surface. It should be volatile enough so that the waiting period is brief before wiping.
3. The wax and its solvent should not have a high solidification temperature because the cooling effect caused by the rapid expansion of the propellant gasses, very often freezes a wax of this type as it leaves the orifice of the dispenser. This causes the dispenser to operate sporadically.

This time saving method of waxing is now economically available to the American housewife and automobile owner. To give an illustration of its economy: At the present time, waxing an automobile with a low pressure aerosol dispenser can be accomplished in 5 to 10 minutes at a cost of less than a dollar per automobile, and the dispenser holds enough wax to process two automobiles.

With some of the waxes, it is necessary to use a cleaner before applying the wax, but tests now underway indicate that a combination cleaner-wax can be incorporated in a single dispenser. One of the spray waxes now available has an indicator incorporated in its formulation which

warns the user against over-spraying. Over-spraying seems to be one of the tendencies of the average aerosol user. This new feature is of great economic advantage to the user.

It has been found that 19 per cent of the automobiles of the United States are professionally waxed, and 81 per cent are waxed by the individ-

ual owners. This fact alone portends the acceptability of a spray wax aerosol dispenser to the American automobile owner, especially since this method of application greatly reduces the time necessary for waxing. Wax aerosol dispensers are now coming on the market and tentative results indicate they may outsell other aerosol products.

Moth Product Aerosols

By N. R. Shepherd

Connecticut Chemical Research Corp.

IN determining the place of a self-dispensing package, plus an effective compound, in the moth products field during the summer of 1948, my company ran an extensive consumer survey to evaluate consumer reaction to existing moth products and moth proofing methods. The results obtained were exceptionally informative. Listed below are some of the data gathered in this survey which was conducted on a large random sample covering a wide range of income level, as well as territorial distribution. Questions and answers from the survey follow:

Question 1:

Do you use, or have you used any product, such as tar paper bags, naphthalene, paradichlorobenzene, moth sprays, moth proofers, etc., to protect your woollens against moth damage?

Answer:

Yes: 94.5%; No: 5.5%

It can readily be seen from the above that the average consumer is fully aware of the extent of the damage caused by insects that attack woollens and that the treating of woollens in the home is practiced religiously from year to year.

Question 2:

What type have you used?

Answer:

Fumigants—

Paradichlorobenzene,

naphthalene 60.1%

Sprays 32.7%

Tar paper 7.2%

The greater usage of fumigants arises out of their lower cost, ease of use, or habit, since fumigants are one of the oldest moth products.

Question 3:

If you used a fumigant, describe how used.

Comment:

73.8% of the people using such fumigants as paradichlorobenzene or naphthalene did not use them in accordance with directions suggested by regulatory officials, particularly with regard to providing air-tight containers or proper dosages.

Many others have substantiated the above finding with regard to the fumigants as well as mechanical methods of moth control (Lesser: 1949) (Schwarcz: 1943). It has been pointed out specifically in connection with fumigants (Mallis: 1945) that a so-called "psychological" moth-proofing takes place due to odor and habitual usage and as a result the user is given a false sense of security.

Question 4:

The group was given sample labels which had essentially the same artwork. In each case labels differed as to the active ingredient statement, which also varied for each of the four descriptive terms given below. (The ingredient statement was in line with an approved formula for the specific term used.) The panel was asked for their preference:

Answer:

Moth Killer . . . 20.8%

Mothicide 15.2%

Moth Spray . . . 11.7%

Moth Proofer . . . 52.3%

This indicated that solely from a packaging standpoint the consumer is more concerned with the same key word than with the ingredient statement or instructions for use.

Question 5:

Suggested newspaper advertisements were prepared in which the artwork and the copy were essentially the same except that the key word used to describe the product was the same as was used on the sample labels. The copy in the advertisement was descriptive of copy that could be used in accordance with regulations for a moth proofer.

Answer:

Moth Killer . . . 31.4%

Mothicide . . . 17.2%

Moth Spray . . . 23.4%

Moth Proofer . . 28.2%

Even when the key word is omitted on the package in advertising copy, the opportunity in a newspaper advertisement to tell more of a story than is possible on the label apparently helps to create the impression in the consumer's mind that she is getting a moth proofer. This substantiates the fact that the consumer can be and is daily confused by the method in which the product is exposed to her.

Question 6:

If you have objections to the fumigant type, what are they?

Answer:

Not Effective . . . 33.2%

Poor Odor 31.3%

Unightly Residue 29.7%

Difficult to Apply . 5.8%

(See Interpretation of Question 3.)

Question 7:

What are your objections to the hand type spray?

Answer:

Not Effective . . . 27.3%

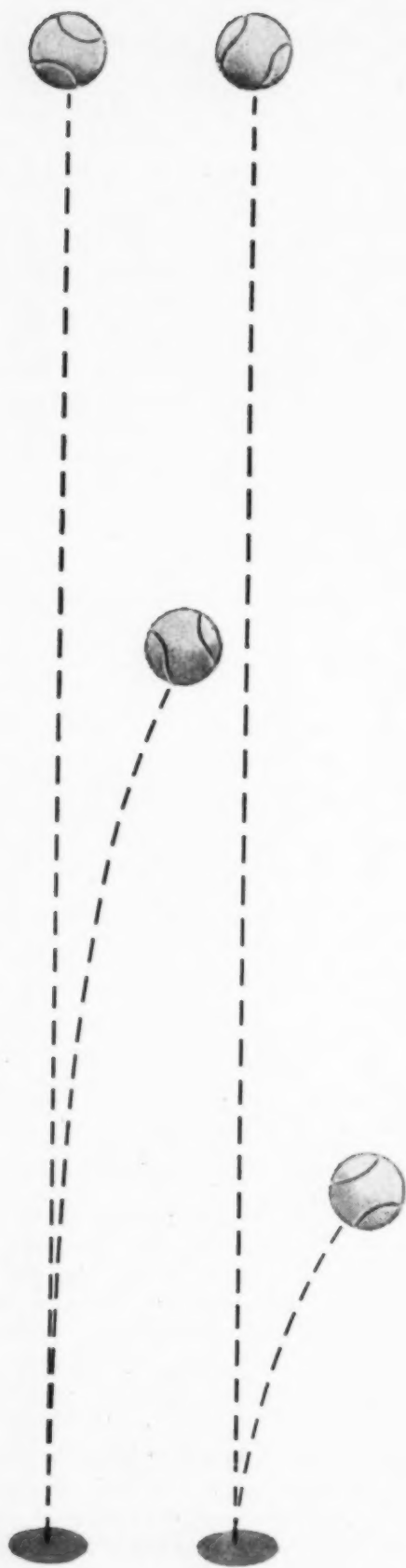
Poor Odor 12.4%

Unightly Residue . 6.1%

Difficult to Apply . 53.2%

A practical study of what is involved in applying a hand spray

(Turn to Page 141)



Getting "more bounce" into your business

Some 15 years ago a simple packaging trick put more bounce into tennis balls.

The trick—putting them in a key-opening can under pressure—pleased everybody.

Inventories could be built up in slack seasons without fear that the tennis balls would go stale.

Shelf and window displays could be made in sporting goods stores easily.

Players had tennis balls with more bounce . . . any time . . . any place.

Perhaps similar expert packaging advice on the part of American Can Company will get "more bounce" into your product.

Canco know-how in devising new and better packaging methods has paid off in extra profits for others for 48 years. Maybe it can do the same for you.

AMERICAN CAN COMPANY

New York • Chicago • San Francisco

CALL **CANCO** FIRST

New Silica for Floor Wax

PART II

TO ILLUSTRATE the use of the data to obtain particle size diameters, the value of 2,000,000 for the weight-average molecular weight of colloidal silica will be employed. The calculations are as follows:

$$\frac{2 \times 10^6}{6.02 \times 10^{23}} = \text{Weight of one particle (or mass)}$$

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}} \text{ or } V = \frac{M}{D}$$

$$V = \frac{M}{D} = \frac{2 \times 10^6}{(6.02 \times 10^{23}) \times 1.9}$$

$$\text{But } V = \frac{4}{3} \pi r^3 = \frac{2 \times 10^6}{6.02 \times 10^{23} \times 1.9}$$

$$r = \left(\frac{2 \times 10^6 \times 3}{6.02 \times 10^{23} \times 1.9 \times 4 \pi} \right)^{1/3}$$

$$r = 7.46 \times 10^{-7} \text{ cm (} 10^{-7} \text{ cm} = 1 \mu\text{)}$$

$$\text{Diameter} = 14.9 \text{ millimicrons}$$

$$\text{Area} = 4 \pi r^2 = 7 \times 10^{-13} \text{ cm}^2$$

This is the average particle in commercial "Ludox" colloidal silica.

Use of "Ludox" In Waxes

USUALLY, the commercial product containing 30% SiO_2 is diluted to the same solids content as is in the wax to be modified. Then, two gallons of the wax are blended with one gallon of the diluted "Ludox" colloidal silica. In many cases, this gives a satisfactory product directly. In some instances, however, although the colloidal silica, itself, is stable even at 30 per cent concentration for at least several years, decreased stability is occasionally obtained with wax dispersions. This instability may be caused by the use of too much borax or sodium soap. Salts generally tend to gel a colloid, and the same is true with colloidal silica. If possible, it is best to eliminate or at least minimize the salt content of the wax dispersions. The pH may also be too low. "Ludox" colloidal silica is most stable at a pH of about 9 or above. A protective

Before 35th Mid-Year Meeting N.A.I.D.M., Chicago, June 13.

By Michael Sveda*

E. I. du Pont de Nemours & Co., Inc.
Grasselli Chemicals Department
Wilmington, Delaware

colloid action has also been noted in some instances, since increased stability has been obtained by varying the sequence of blending of the basic wax dispersion, the shellac or manila gum dispersion, and the diluted colloidal silica.

Skid Resistance and Role of the Particle Size of the Wax

THE nature of the effect of scuffing a surface with the sole of a shoe is such that, by the dynamic pendulum machine for checking skid resistance, developed by the National Bureau of Standards,

- (1) an increase in coefficient of friction from 0.32 to 0.36 is not significant to the pedestrians, whereas
- (2) an increase from 0.39 to 0.43 is significant.

In order to obtain acceptable coefficients of friction in the range of 0.40 and higher, it has been found necessary to add shellac or manila gum to carnauba dispersions, along with the "Ludox" colloidal silica. For example, in one of the usual carnauba-morpholine oleate systems, the following results were obtained:

Modification	Coefficient of Friction
Parent dispersion	0.32

Wax solids: SiO_2 = 2:1	0.36
Wax solids: manila gum = 6:1	0.36
Wax solids: shellac = 6:1	0.34
Wax + manila: SiO_2 = 2:1	0.44
Wax + shellac: SiO_2 = 2:1	0.44

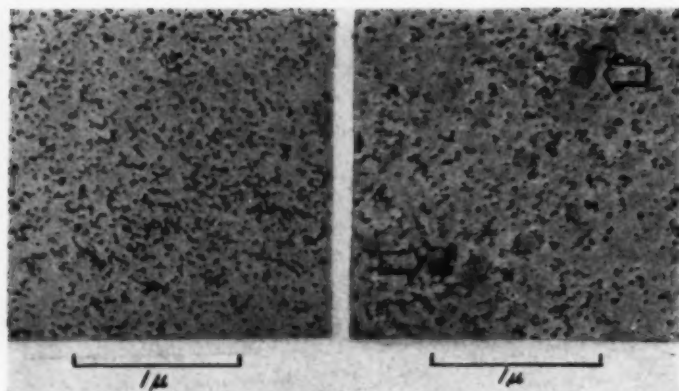
Films from the first four compositions all feel about equally slippery to the foot, whereas the last two products give slow surfaces.

Evidence has been obtained that skid resistance also appears to increase with decreasing particle size. This result should be considered tentative in nature, but it is felt to be of sufficient importance to warrant publishing a preliminary note.

An ordinary carnauba-morpholine oleate system was varied by using increasing amounts of morpholine oleate to obtain dispersions ranging in appearance from milky (indicating larger particle size) to almost transparent (indicating smaller particle size). The results obtained with the dynamic pendulum skid resistance machine are given below—

The trend toward increased skid resistance appears to be unmistakable. It is thought that when smaller wax particles are used, more colloidal silica is presented to the foot, because electronmicrographs show that the colloidal silica surrounds

Appearance of Dispersion	Coefficients of Friction		
	Parent Emulsion	Parent Emulsion: SiO_2 2:1	Parent: Shellac 3:1
Milky ↓ Almost Clear	0.27	0.36	0.44
	0.29	0.36	0.46
	0.32	0.37	0.46
	0.32	0.41	0.51



"Ludox" Colloidal Silica
—25,000x

Figure 7

"Ludox" Modified Wax
Dispersion—25,000x

each individual wax particle (Figure 7). This may also be a partial explanation of the "booster" effect of shellac or manila gum on colloidal silica, since shellac or manila gum dispersions probably have smaller particle size than the wax itself.

Corroboration of the location of colloidal silica particles has been obtained by showing that the colloidal silica particles are actually in the surface of the wax film. The technique used for taking electronmicrographs of the wax surface is shown in Figure 8. Figure 9 now compares the electronmicrograph from Figure 2 and a surface replica of a carnauba-morpholine oleate-shellac system modified with "Ludox" at the usual ratio of total wax solids: SiO_2 of 2:1. Colloidal silica particles can be seen lying in the surface of the film.

So far as is known, this is the first instance where an actual definitive photograph has been made of the surface of the wax film. It is hoped that the technique shown in Figure 8 will be used for following the effect of the dispersion on the nature of the wax film laid down.

Gloss and Appearance of Depth

THE increased gloss often obtained by the addition of colloidal silica to wax dispersions probably results from the

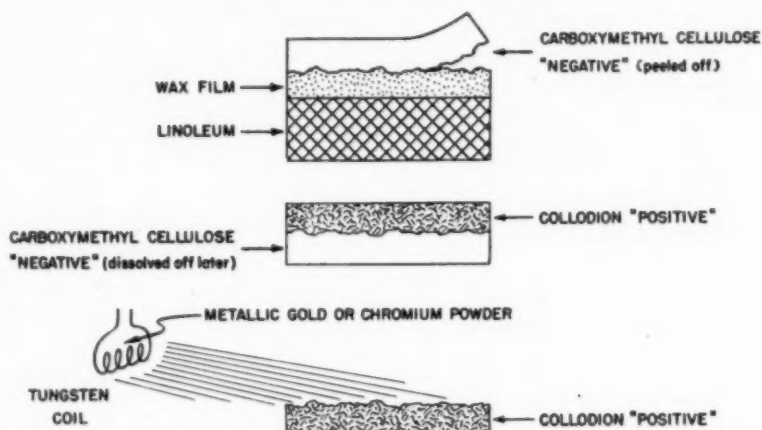
smaller colloidal silica particles smoothing out the normal surface roughness of a wax film. In many cases also, the addition

of colloidal silica gives the appearance of greater depth of film. This may result from the clarity of the individual particles of colloidal silica, which lets light down into the film, so that refraction is obtained from layers of wax particles throughout the thickness of the wax film.

Freeze Resistance of Waxes Modified with "Ludox"

INCREASING emphasis is being given to freeze resistant waxes. Preliminary experimental work has shown that waxes modified with "Ludox" can be made freeze resistant by the use of ethyl amine. Straight "Ludox" colloidal silica precipitates irreversibly upon freezing. The addition, however, of 8 per cent ethyl amine based on the SiO_2 content gives at least six freeze-thaw cycles without residual

ELECTRONMICROGRAPHS OF WAX SURFACES



TAKE ELECTRONMICROGRAPH OF "SHADOW CAST" COLLODION POSITIVE REPLICA.

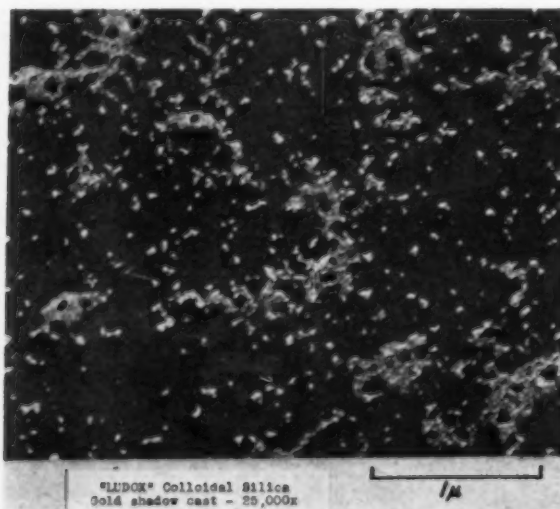
Figure 8. Technique for photographing surface of wax films.

Figure 2, at extreme left

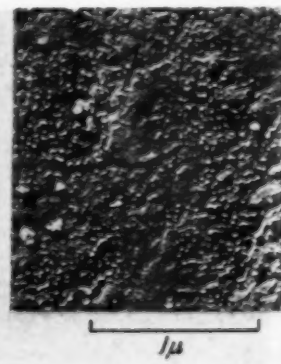
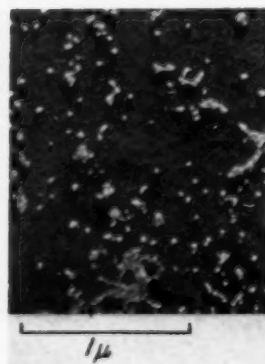
Figure 9 (below)

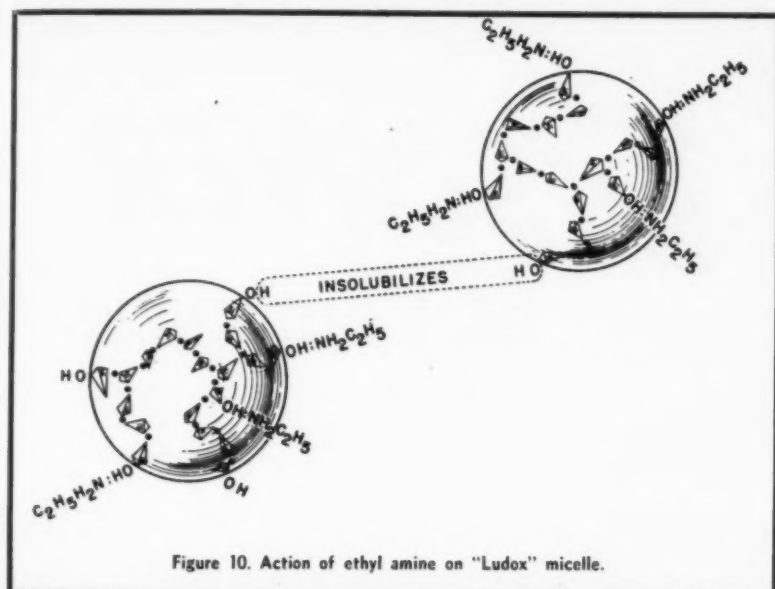
"Ludox" Colloidal Silica
Gold shadow cast—25,000x

Replica of "Ludox" modified
wax film, chromium shadow
cast—25,000x



"LUDOX" Colloidal Silica
Gold shadow cast - 25,000x





present on the surface of the silica micelle interact when freezing occurs, resulting in the formation of large masses of insoluble silica. The strong hydrogen-bonding action of ethyl amine probably results in an oriented layer of ethyl amine molecules over the entire surface of the silica micelle. When this happens, the peripheral layer of organic groups cannot interact to link the micelles together, and the colloidal silica readily redissolves upon thawing. It is interesting to note that according to our calculations, 8 per cent ethyl amine corresponds very nearly to one molecule of amine for each silicon atom on the surface.

Ethyl amine has also been used successfully in obtaining freeze resistance on three formulations of commercial wax modified with colloidal silica to a wax solids:SiO₂ ratio of 2:1 (Table 1). A con-

centration of 8 per cent ethyl amine based on the SiO₂ content in a usual formulation containing 12 per cent total solids is only 0.32 per cent free ethyl amine on a solution basis.

Long-term stability tests have not yet been made on ethyl amine-modified waxes containing colloidal silica. Solutions have been made with at least two months' stability at room temperature, and at least one week at 125° F. Ethyl amine is not the complete answer, however, since it did not work well on two other wax dispersions tested. These waxes may have materials present which may remove the ethyl amine layer from the colloidal silica micelles after blending.

Acknowledgments

GRATEFUL acknowledgment is made to Drs. J. B. Nichols and C. E. Wil-

loughby, of our Central Chemical Department in Wilmington, for light-scattering data and the electronmicrographs, respectively; and to Dr. F. J. Wolter of our Cleveland Experimental Laboratory for gloss measurements and coefficients of friction on wax films.

Summary

"LUDOX" colloidal silica is made by an ion exchange process, and contains 30 per cent SiO₂ in aqueous solution. The weight-average molecular weight is 2,000,000.

Light-scattering techniques have been indispensable for estimating weight-average molecular weights during the development of this material. The same technique should find application for developing better waxes.

In water waxes, "Ludox" gives increased skid resistance and gloss, and decreased tackiness of the film.

To obtain sufficiently high increases in skid resistance, materials like shellac and manila gum are used along with the colloidal silica in carnauba formulations. Waxes having smaller particle size appear to give the greatest increases in skid resistance with colloidal silica.

An electronmicrograph technique involving the use of collodion replicas has been developed for studying the surface of wax films.

Freeze resistance of waxes containing colloidal silica can be obtained in some instances by using free ethyl amine in the finished formulation.

Bibliography

- (1) P. Debye, *J. Phys. and Colloid Chem.*, 51, 18 (1947).
- (2) G. Oster, *Chem. Rev.*, 43, 319 (1948), gives an excellent summary of light-scattering, including the history of the method.
- (3) R. Stein and P. Doty, *J. Am. Chem. Soc.*, 68, 159 (1946), describe a visual form of the light-scattering device.

Fungicidal Testing

Metal-tolerant cellulose-decomposing fungi may be isolated from soils very readily by simply streaking a soil suspension on filter paper which is impregnated with the desired mildew-preventive compound and which rests on the surface of mineral-salts agar in Petri dishes. The use of such fungi in textile tests is practicable in some cases, but interpretation of the results needs to be made with care. As with the soil-burial test, it is entirely possible by the use of fungicide-tolerant organisms to give an unwarranted "unsatisfactory" rating to materials which may in fact be moderately or even highly satisfactory under actual service conditions. P. B. Marsh, *Am. Dyestuff Reporter* 38, 436, 451-2 (1949).

TABLE 1—Gloss After Successive Freeze-Thaw Cycles

(16 hours at -10° C.; slow thaw to room temperature.)

* Gloss Values on Black Rubber
After Cycle Number

Wax No.	per cent C ₂ H ₅ NH ₂	pH	Unfrozen	1	2	3	4	5
(1)	0%	9.03	16.0	2.4	..	..	..	..
	2	9.23	23.6	1.6	..	..	..	..
	4	9.40	29.2	13.0	15.0	5.4	3.6	3.0
	8	9.83	29.6	14.6	26.0	33.2	22.8	12.2
(2)	0	9.22	10.2	1.4	..	..	..	..
	2	9.56	10.6	1.2	..	..	..	..
	4	9.82	10.6	9.8	5.6	2.2	3.0	2.0
	8	10.35	11.0	12.2	24.6	36.6	17.4	11.2
(3)	0	9.50	19.2	0	..	..	..	..
	2	9.73	19.0	0	..	..	..	..
	4	9.93	22.8	1	..	..	..	..
	6	10.18	25.6	15.0	9.4	7.8	3.4	3.8
	8	10.42	24.8	28.2	16.4	18.2	14.4	14.2

* Photovolt 610 used. Any value of 10 or higher represents good gloss. Because of variations in initial gloss of black rubber tile, variations of 1 or so are not significant.



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DIRECTLY and indirectly, sanitizers are assuming increasing importance in our daily lives. Sanitizers are essential, for example, in the food industries, and more and more food products are being processed before reaching the consumer. The persistent emphasis by public health workers on the need for more and better cleanliness and sanitation has had its effect on the thinking of the nation's legislators. The general public has also become very "sanitation conscious." These and other factors have contributed to the

interest and value to those concerned with the operation and management of swimming pools, water purification systems and sewage treatment and industrial waste disposal units. In passing, it may be mentioned that the hypochlorites are valuable bleaching agents. This phase of utility has already been discussed in a recent review (2) on laundry bleaches.

In a general way, it may be said that the germicidal effectiveness of a

oxidation has an important part in the destruction of microorganisms when they are exposed to the action of chlorine solutions. There is evidence, however, that a direct chlorination of the bacterial cell plasma also occurs. He also points out that the most remarkable characteristic of chlorine is

Hypochlorites as Sanitizers

By Milton A. Lesser

growing status of sanitizing materials.

It may surprise many people to learn that the well known, if somewhat old fashioned hypochlorites lead the field of general purpose sanitizers. They have retained this position despite the introduction of other well publicized sanitizing agents. This fact was brought out in Bartlett's (1) recent report on such products in which it was stated that the hypochlorites are the most widely used sanitizers.

One outstanding characteristic of the hypochlorites is their wide range of utility as disinfectants, germicides and deodorizers. An important part of the cleaning and health-protecting materials in most households, hypochlorites also perform similar tasks in hospitals, schools and public buildings. Their protective influence is also felt in restaurants, taverns, soda fountains and other public eating places. The hypochlorites are also invaluable as sanitizers in food processing plants, dairies, canneries, deep freeze and beverage bottling plants. These chlorine-releasing compounds are also of in-

hypochlorite depends upon its "available chlorine." The confusion which is sometimes associated with this expression originates from the old gas evolution methods employed to determine the strength of chlorinated lime. The sample was acidified and the volume of the evolved chlorine gas was measured and expressed in terms of "per cent chlorine available." Although this method has been replaced by titration procedures, the old expression of strength still persists. Stated simply, "available chlorine" is a measurement of the oxidizing power expressed in terms of an equivalent quantity of chlorine. (3)

As explained by McCulloch, (4) when the statement is made that a stabilized calcium hypochlorite yields 70 per cent available chlorine, it does not imply that 70 per cent of the weight of the compound is available as chlorine, but merely that the total oxidizing power of the material is such that it would require 70 per cent of available chlorine to equal it. The chlorine strength of the actual working solutions is generally expressed in parts per million or p.p.m.

In discussing the antibacterial mechanism, this authority states that

the extremely great dilutions at which it exerts a rapid and efficient germicidal action. There are, nonetheless, several factors which greatly influence this efficiency. These are temperature, reaction or pH, and especially the presence of organic matter. (5)

Early investigators overlooked the influence of temperature on the effectiveness of the hypochlorites, but this factor was taken into consideration in later studies. In one series of tests, (6) for example, it was found that almost twice the concentration of hypochlorite was needed to kill the test organism, *E. typhosa*, at 2°C. as at 40°C.

pH Determines Efficiency

IT HAS long been known that the germicidal efficiency of hypochlorite solutions was greatly influenced by the pH; best results being obtained in the lower range. Indeed, Charlton and Levine (7) considered pH to be the most important factor in determining the efficiency of the hypochlorites. The importance of this factor is well indicated in the more recent studies of Wolf and Cousins (8) on the hypochlorite sterilization of metal surfaces infected with bacteria suspended in milk. They found that the percentage survival of *B. subtilis* spores in contact with a solution containing 50 p.p.m. of available chlorine

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for five minutes was 0.2, 2.5, and 80, at pH values of 7, 7.85, and 9, respectively. *Thurmoduric* micrococci and *Staphylococcus aureus* both behaved differently from these spores, showing optimum "kills" at pH 9.4, 9.8, 10.5, and 11, with concentrations of 25, 50, 100, and 200 p.p.m. available chlorine, respectively. Their findings put emphasis on the importance of using a not-too-alkaline detergent in conjunction with hypochlorites for sterilization (of dairy utensils). They feel that the pH of the combined solution should not exceed 10 to 11.

There is general agreement that organic matter is of major importance in reducing the antibacterial effectiveness of the hypochlorites. As pointed out by Schwarcz, (9) the hypochlorites are powerful oxidizers and will therefore act upon any oxidizable matter with which they come in contact. If the active agent is consumed in this way, there is a restricted action on the organisms present and the germicidal effectiveness of the compound is proportionately reduced. This helps to explain the insistence on the part of both sanitation experts and reputable hypochlorite producers that all contaminated surfaces be cleaned thoroughly before applying the chlorine compounds. It also helps to explain why the phenol coefficient test is not applicable to the hypochlorites.

Of interest in this connection is the work done by Neave and Hoy. (10) To approximate the conditions encountered when dairy utensils are improperly cleaned, tin trays were artificially infected with *Staphylococcus aureus* in dilute milk. The surfaces were allowed to dry and were then disinfected with sodium hypochlorite solutions. Under these conditions the pH of the hypochlorite solutions was not an important factor in determining their germicidal efficiency. At pH 10 and 11, the solutions were

equal to or slightly more efficient germicides than solutions at pH 7. In the destruction of 99 per cent of the organisms on the metal trays, a solution at pH 10 containing 200 p.p.m. of available chlorine was seven times as rapid as one with 25 p.p.m. The addition of 0.2 per cent of whole milk to a hypochlorite solution containing 200 p.p.m. of available chlorine did not significantly reduce its efficiency within 30 minutes.

THE most important competitors of the hypochlorites are the quaternary ammonium compounds. Comparisons of the two types of sanitizing materials have yielded some very interesting and valuable information. However, the findings are not always in full agreement.

Considerable work along these lines has been done by Johns (11) in Canada. In one of his reports, (12) he pointed out that quaternary ammonium compounds, like chlorine compounds, show differences in their relative potency. In general, the quaternaries are more effective against Gram-positive organisms, while the hypochlorites show an even greater advantage against the Gram-negative species tested. He found that while the quaternary compounds show some responses to favorable adjustments in temperature and pH, these are much slighter than those shown by the hypochlorites.

Also indicative are comparisons of disinfecting properties reported by Shere. (13) Six commercial quaternaries were employed in this study. There was considerable variation in their germicidal effect. Hardness in water reduces this germicidal power, as do anionic wetting agents commonly found in cleaning compounds. Organic materials, such as milk solids, also reduce the germicidal action of quaternary ammonium compounds,

and that of hypochlorite. However, with milk solids, hypochlorite is effective at lower concentrations than any of the quaternaries tested. Lowering the temperature of the water to below 68°F. lowers the disinfecting power of the quaternaries. Precipitates formed in hard water by the water-softening action of certain alkalies absorb and remove from solution part of the quaternaries, but these precipitates do not absorb hypochlorites. Shere noted that increased water hardness, adding of anionic wetting agents and water temperatures below 68°F. have no adverse effect on the disinfecting action of sodium hypochlorite.

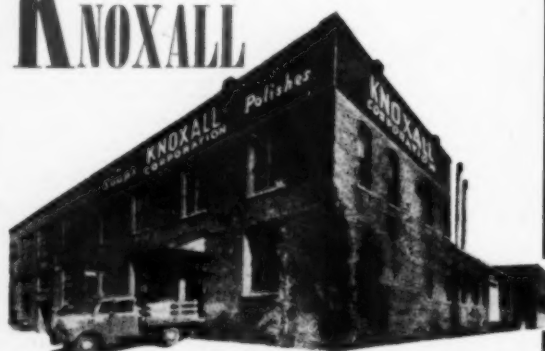
The pros and cons of the two types of sanitizers are summarized in Bartlett's (1) report. He notes that the better hypochlorites are extremely effective at very high dilutions in the absence of organic matter. They can be provided at relatively low cost. The principal objections are the odor and lack of stability. Hence fresh solutions must be prepared at frequent intervals. They do not provide any residual action and their efficiency is considerably reduced in the presence of any oxidizable organic contamination. However, because of the low cost, they can be used in higher concentrations than is usually required so as to assure effective sanitization in the event that precleaning has not been too thorough.

Bartlett notes that the quaternary ammonium compounds are stable and odorless at the concentrations usually employed. They retain their effectiveness in the presence of moderate amounts of organic contamination, but they are not quite as rapid in their action and are not as effective in high dilutions as the hypochlorites. As pointed out by Ridenour and Armbruster, (14) it should also be noted that sanitization efficiency varies widely with different quaternary ammonium compounds; amounting in certain cases to a dosage of many hundred per cent for the same efficiency under the same conditions.

With respect to the stability of hypochlorites, McCulloch (4) acknowledges that all hypochlorites deteriorate, but points out that the rate is influenced by the type of compound and the conditions under which it is

Hypochlorites, one of the older sanitizing agents, are still the most widely used type. They find many applications because they are fast acting, efficient and not expensive.

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stored. Contamination with metallic salts, low alkalinity and exposure to light and heat result in rapid deterioration. The better calcium hypochlorite type of products are reasonably stable as long as they are dry, cool and sealed. Significant is the statement that no hypochlorite is both highly stable and rapidly germicidal. Hypochlorites which are quite alkaline tend to be more stable and less corrosive, while those which are less alkaline tend to be more active germicides.

For most commercial users, hypochlorites are made available as dry powders containing 70, 50 or other percentages of available chlorine. Some liquid hypochlorite products are also supplied, but these are generally restricted to local distribution, usually to small consumers and householders. As reminded by Schwarcz, (9) according to the Caustic Poisons Act, any product containing more than 10 per cent (100,000 p.p.m.) of available chlorine must be labeled "poison" as required by law.

The hypochlorites are provided as chlorinated lime (bleaching powder), calcium hypochlorite products, and sodium hypochlorite preparations. Bleaching powder, long known to sanitation science, nowadays plays a minor role in the hypochlorite consuming industries. It is made by a rather simple method in which chlorine gas is passed over hydrated or slaked lime.

Important to Sanitarians

BECAUSE of their superior stability and high available chlorine content, calcium hypochlorite products are the most important of the chlorine-releasing compounds sold to sanitarians. Moreover, as indicated by the recent patent literature, (15-18) efforts are constantly being made to provide purer, more stable, generally better high test products. Essentially they consist of pure lime chlorinated to a very high degree to yield large proportions of available chlorine. Ready-to-use powders for sanitizing purposes are often prepared by diluting these high test products with sodium carbonate or sodium chloride to yield products having various percentages of available chlorine. When mixed with water in the required proportions,

these form stock or immediate-use solutions of sodium hypochlorite.

Because of their relative instability, prepared solutions of sodium hypochlorite are generally restricted to rather local distribution. They usually contain from three to five per cent of available chlorine for domestic and similar small scale sanitizing purposes. The stronger sodium hypochlorite solutions, containing 10 to 15 per cent of available chlorine, are intended for industrial consumers. Both types of solution are made commercially by the reaction of gaseous or liquid chlorine with caustic soda in a well-cooled aqueous solution. Details on production are available from the several producers of chlorine.

According to Commercial Standard CS68-38, covering liquid hypochlorite disinfectant, deodorant, and germicide, liquid hypochlorites are available in three forms: (a) sodium hypochlorite alkaline with sodium hydrate, sodium carbonate or other alkaline salts; (b) hypochlorites which are essentially sodium hypochlorite alkaline with calcium hydrate; and (c) calcium hypochlorite solutions alkaline with calcium hydrate. The Standard requires that the hypochlorite solution shall be ready for dilution when delivered. It is also required that the available chlorine content, which must not be less than 2.5 per cent by weight, must be clearly stated on the label. The rate of deterioration of the solution must not be more than 10 per cent of its original available chlorine in six months when stored in the original container in a cool, dark place, at a maximum temperature of 20°C.

Over the years various methods have been developed to increase the antibacterial action of hypochlorite preparations and to combine this action with a detergent effect. An interesting example of the former type of product is given in a patent granted to Rogers and Voge. (19) In their process dry calcium hypochlorite is dried to a fine powder. To about 75 per cent by weight of this powder, 25 per cent of ground sodium perborate is added and during their mixing, a small proportion of fine talc is incorporated. The resulting mixture is compressed, coarsely ground, and finely

tableted; no other binding agent being necessary. Tests have shown that the perborate improves the germicidal properties of the products.

In discussing the combination of an alkaline detergent and a chlorine disinfectant, McCulloch (4) has stressed the fact that a too high pH value will result in retarded antibacterial efficacy. Similarly, Cousins and Wolf (20) have suggested that detergents used in conjunction with hypochlorites should have pH values between 10 and 11.

A number of examples of such combinations are available in the technical and patent literature. Very interesting is a cleaner developed by the Germans and reported by a team (21) from the Technical Industrial Intelligence Division of the U. S. Department of Commerce after the war. Designed to prevent the corrosion of tin and aluminum and described as a disinfecting bottle-washing agent for the food industry, hotels, farms and dairies, the product consisted of:

	per cent
Sodium silicate ($\text{Na}_2\text{O} \cdot 2 \text{SiO}_2$)	50.0
Sodium hypochlorite solution	12.4
Trisodium phosphate ($12\text{H}_2\text{O}$)	21.6
Trisodium phosphate (anhydrous)	9.0
Sodium alkyl sulfate (100%)	3.2
Water and salts, to make	100.0

The hypochlorite solution contained 120 Gm. of active chlorine per liter. The sodium alkyl sulfate was of the 12 to 18 carbon atoms type. In the preparation of this cleaner, which apparently was quite an important product in the dairy industry, the phosphate was charged into the mixer first and then the hypochlorite solution was added. When the water was all taken up, the rest of the ingredients were added. It is interesting that the final product is a dry powder. It is explained that when part of the ingredients are used in the form of solutions, the water is taken up as water of crystallization by the anhydrous salts.

Another hypochlorite-containing preparation of this series is provided as a liquid disinfectant-cleaner for dairies, one that is particularly useful in sanitizing butter-making equipment. This consists of:

	per cent
Sodium silicate solution (37-40° Be.)	55.55

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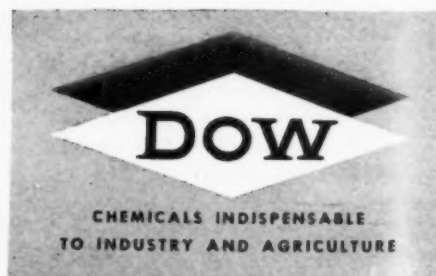
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The hypochlorite solution used in this product contains 120 Gm. of active chlorine per liter. It is also pointed out in this report that some of these products may have been patented.

The patent literature offers a number of indicative combinations containing both hypochlorites and synthetic detergents. In one interesting example, (22) dry sanitizing mixtures are described as consisting of a stable hypochlorite containing up to 50 per cent of available chlorine, more than enough sodium carbonate to react with all the calcium present, and a water-soluble detergent such as a quaternary ammonium salt.

In another case, (23) methods are given for combining concentrated hypochlorites with certain surface active or wetting agents. With these agents, it was found that the hypochlorite compositions are capable, even after 5,000 hours' storage at 100°F., of producing solutions of good sudsing power and which also are excellent bleaching, germicidal, disinfectant, and deodorizing agents. Moreover, the compositions are provided as substantially dry solids. Typical preparations consist of calcium hypochlorite having 70 to 72 per cent available chlorine and three to 10 per cent of a compound like dodecyl benzene sodium sulfonate ("Santomer" No. 1 made by Monsanto Chemical Co., St. Louis).

Although the calcium and the sodium salts are today the most important hypochlorites, they may yet share their position with lithium hypochlorite. (2) This newcomer, which must still make its presence felt in the market, is said (24) to possess a number of advantages of its own. Among these are a very high available chlorine content, stability and easy utilization for making sanitizing solutions.

As previously indicated, the phenol coefficient determination is not applicable to the hypochlorites. Therefore, as noted by Bartlett, (1) with products of this type it has been necessary to determine the proper concentrations by trial under actual conditions of use. Hence manufacturers simply recommend the dilutions which

have been found to do the sanitizing job under practical conditions. They usually allow for a wide safety factor.

The recommended dilutions of both liquid preparations and dry hypochlorite powders depend, of course, on the available chlorine content of the individual products. Working solutions of different concentrations can be prepared by adding the correct amount of hypochlorite to water. A common procedure is to make a supply or stock solution containing one per cent (10,000 p.p.m.) of available chlorine and to reduce this standard solution, as required, with water. Probably the most frequently used concentration is one providing 200 p.p.m. of available chlorine. However, concentrations ranging from as low as five p.p.m. to 5,000 p.p.m. are employed; the latter strength being used for destroying mold.

Applications Are Varied

THE applications of the hypochlorites as sanitizers are so varied that it is not possible to discuss them in any great detail. Hypochlorite is widely employed, for example, to control bacteria and odors in food processing and beverage bottling plants and equipment. As noted by Schwarcz (9) hypochlorite has gotten the widespread approval of health authorities as a sanitizer in those fields because: (a) when applied after thorough cleaning, it kills bacteria rapidly and effectively; (b) it is nonpoisonous at concentrations of high germicidal efficiency; (c) its decomposition products are nonpoisonous; (d) it acts as a deodorant as well as a disinfectant; (e) the temperature of the solution has a negligible effect on its germicidal activity; and (f) it is colorless and stainless. It should be noted, however, that while chlorine sanitizers do not affect glass, stainless steel or most non-metallic materials, they do have a tendency to corrode tinned iron, copper, nickel and other metals. Nor must it be forgotten that chlorine sanitizers are potent bleaching agents.

As is already evident, hypochlorite solutions find extensive use in the dairy products industries. There is no need to discuss this phase of utility since it has already been considered in some detail in a previous review. (25)

Specific examples from other phases of the food processing industry also help to illustrate the value of these sanitizers. Thus, Booker (26) reported that plant chlorination, using not less than five p.p.m., effected a reduction of 35 per cent in the bacterial count of frozen cut green beans and 56 per cent in the case of the French-style product. There was also a 78 to 83 per cent reduction in the bacterial population of inspection belts, and a 38 to 96 per cent reduction in the case of other equipment such as graders, snippers and chutes.

In soda fountains, soft drink stands, bars, restaurants and other public eating places, hypochlorite sanitizers not only help to eliminate bacteria in the areas where food is handled, but also combat these organisms on kitchen equipment, dishes, eating utensils and drinking glasses. Of interest in this connection is work done by Mallman. (27) Field studies, using sodium hypochlorite to provide 170 p.p.m. of available chlorine, showed that within 30 seconds of rinsing and swabbing, beverage glasses were practically bacteria-free. Five gallons of such a solution served for 700 glasses. In a paper read before the N.A.I.D.M., this worker and his associates (28) pointed out that there are many dishwashing operations for which hot water is not applicable and chemical cleaning is necessary. After a thorough study of the problem they recommended immersion for two minutes in hypochlorites containing 200 p.p.m. available chlorine as a rapid and efficient way of removing all bacteria from glasses and chinaware. The solution not only displays good antibacterial properties but also imparts no undesirable tastes or odors.

The housewife is a good customer for liquid hypochlorite products and the solutions are standard equipment in the cleaning set-up of most homes. Especially useful in the bathroom and kitchen, these preparations serve to maintain toilet facilities in a sanitary condition, deodorize drains and garbage pails, combat bacteria, molds and odors in refrigerators and bread boxes, and are used for many other purposes. Valuable as a bleach

(Turn to Page 139)

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SURFACE FILM STUDIES ON

DDT-OIL LARVICIDES ⁽¹⁾

By Lt. Benjamin F. Burgess, Jr., MSC, USN ⁽²⁾

Naval Medical Field Research Laboratory
Camp Lejeune, North Carolina

THE control of mosquito larvae by applying oil to breeding areas has been practiced for many years. Many failures, however, to obtain satisfactory kills were attributable to disruption of surface layers of the oil due to the presence of biological films, poor spreading powers of the oil, and low toxicities. In many instances, the resistance of biological films ⁽¹⁾ is greater than the spreading pressure of the larvicidal oil.

In the past six years, the addition of DDT has greatly improved the killing properties of oil larvicides. Recently the incorporation of surface active agents has increased larvicidal efficiency by promoting a surface-oil-continuity and a rapid spreading of the toxic DDT solutions.

The purpose of this project is to obtain information on new petroleum oils and surface active agents that may produce formulations having (a) more stable surface films and (b) higher spreading coefficients.

Preliminary field investigations appear promising. The application of these results may well be extended to further experimentation.

Procedure

SAMPLES of oils and surface active agents were obtained for laboratory and field testing purposes from

⁽¹⁾ Research Project NM 005 026—Studies on Insect Control—Sub-project 3-48—Surface Film Studies on DDT-Oil Larvicides.

Acknowledgement is made to Commander J. S. Cowan, MC, USN, and Lieutenant Commander W. J. Perry, MSC, USN, for the many valuable suggestions offered in the preparation of this manuscript. Opinions or conclusions contained in this report are those of the author. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department.

⁽²⁾ Department of Chemistry.

Improved larvicides have been made possible through the use of DDT and surface active agents. Study reports on new oils for more stable films.

several leading manufacturers. Various combinations of oils and spreading agents were tested for surface film stability and surface film pressure by means of the hydrophil balance. Tests for toxicity to mosquito larvae were made in artificial containers 13" long, 9" wide and 5" deep.

TABLE I—Data on larviciding solutions containing 0.5% Triton B 1956 and 1.0% DDT in various oils

Oil and Manufacturer	Initial Boiling Point in °C	Sp.G at 20°C	Abs. Visc. Centipoise at 20°C	Spreading Pressures Dynes/cm	Type of film produced
American Mineral Spirits..	246	1.12	5.21	1.24	Lens formation
Amsco H T Solvent					
ABC Indus. grade Xylene					
Alabama By-products Co...	129	0.85	1.02	2.36	Lens formation
"Carbitol" Acetate solvent					
Carbide & Carbon Corp.	212	1.10	2.51	1.77	Lens formation
Isophorone					
Carbide & Carbon Corp.	211	0.92	2.58	2.36	Lens formation
S/V Solvicide 544C					
Socony Vacuum Co.	188	0.94	2.35	1.40	Continuous
Solvent 4060-0					
Union Oil Co.	70	0.92	2.83	1.46	Lens formation
Medium Aromatic Oil 8277					
Shell Oil Co.	90	0.93	3.90	1.71	Continuous
Solvent E407R					
Shell Oil Co.	200	0.89	2.00	1.62	Lens formation
Amsco HCC Solvent					
American Mineral					
Spirits Co.	229	0.94	3.27	1.24	Lens formation
Heavy RS Naptha					
Standard Oil Co.	164	0.89	1.83	0.95	Lens formation
Solvesso #100					
Standard Oil Co.	163	0.87	0.89	1.71	Lens formation
300 Pale Oil					
Texaco Oil Co.	260	0.92	169.73	1.08	Lens formation
70 Pale Oil					
Texaco Oil Co.	250	0.91	25.07	1.23	Continuous
100 Pale Oil					
Texaco Oil Co.	240	0.91	44.69	1.15	Lens formation
Kerosene	180	0.85	1.98	2.19	Continuous
Oil Service Solvent					
Oil Service Inc.	191	0.84	13.03	1.38	Lens formation



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Fifty anopheline larvae obtained from local ponds were introduced into each of 12 basins divided into 3 series of 4 each. The following formulations were applied at the rate of 1 gallon per acre: (a) kerosene containing 1.0 per cent DDT; (b) kerosene containing 1.0 per cent DDT and 0.5 per cent "Triton B 1956"; and (c) kerosene containing 1.0 per cent DDT and 0.5 per cent "Ethofat 142/20." One basin containing 50 larvae was maintained as a control. Each of the test samples contained one gram of DDT and five-tenths milliliter of a surface active agent per 100 cubic milliliters of solution. The solvent in each test formulation was a petroleum oil under investigation.

Previous reports (2) and (3) have shown that formulations containing petroleum oils, DDT and 0.5 per cent "Triton B 1956" produced a satisfactory film when applied at the rate of one gallon per acre. These data served as a basis for tests conducted on the various formulations.

The following combinations were tested to determine film stability and surface pressure:

- Oils containing 1.0 per cent DDT having no surface active agent.
- Oils containing 1.0 per cent DDT and 0.5 per cent "Triton B 1956." (Table I).
- Kerosene containing 1.0 per cent DDT and 0.5 per cent surface active agent. (Table II).
- Combination of four best oils with four best surface active agents determined from results obtained in (b) and (b). (Table III).

Technique

FILM pressures were determined at 27°C. with the hydrophil balance. Double distilled water was used in the tray of the hydrophil balance to eliminate contaminants and to produce standard measurements throughout the tests. The instrument was operated in a draft-free chamber.

The hydrophil balance is designed for measuring surface pressures of oil films through the thrust imparted to a length of mica floating upon a confined liquid surface. This

TABLE II—Data on larviciding solutions containing 0.5% of the various surface active agents in kerosene having 1.0% DDT.

Surface Active Agent	Spreading Pressure Dynes/cm.	Type of Film
Ethofat 142/20		
Armour & Co.	2.85	Continuous
Ethomeen S/20		
Armour & Co.	2.60	Lens formation
Triton X-155		
Rohm & Haas Co.	1.90	Lens formation
Triton B 1956		
Rohm & Haas Co.	2.19	Continuous
Nonisol 100		
Alrose Chemical Co.	2.22	Lens formation
Nonisol 210		
Alrose Chemical Co.	2.07	Continuous
Nonisol 110		
Alrose Chemical Co.	2.19	Lens formation
Nonisol 200		
Alrose Chemical Co.	2.64	Lens formation
Solvadine EO		
Ciba Co., Inc.	2.05	Continuous
Emulsifier L-32		
Jacques Wolf & Co.	2.54	Lens formation
Tween 80		
Atlas Powder Co.	2.11	Lens formation
Maypon K.		
Welch, Holme & Clark Co.	2.24	Lens formation
Sellogen 0-141		
Jacques Wolf & Co.	1.43	Continuous
Alkaterg-C		
Commercial Solvents	1.71	Continuous

thrust transfers a measurable torque to a torsion wire suitably suspended between two torsion heads, each of which may be precisely adjusted.

Interpretation and Conclusions

(A) PRELIMINARY testing showed that none of the 16 samples of oils containing 1.0 per cent DDT produced a detectable sur-

face pressure on the hydrophil balance when applied at the rate of one gallon per acre.

(B) A measurable comparison of the spreading pressures and stabilities of these various oils was obtained by adding 0.5 per cent "Triton B 1956." Four of the oils (kerosene; medium aromatic oil 8277; "S/V Sovacide PD544C" and "70 Pale Oil")

TABLE III—Combinations of best oils and best surface active agents.

OIL	Surface Active Agent	Spreading Pressure Dynes/cm	Type of Film produced
Kerosene	Ethofat 142/20	2.79	Continuous
Kerosene	Triton B 1956	2.23	Continuous
Kerosene	Nonisol 210	2.13	Continuous
Kerosene	Solvadine EO	2.05	Continuous
Sovacide Pd544C	Ethofat 142/20	1.83	Continuous
Sovacide Pd544C	Triton B 1956	1.37	Lens formation
Sovacide Pd544C	Nonisol 210	1.81	Lens formation
Sovacide Pd544C	Solvadine EO	1.87	Continuous
Medium Aromatic Oil 8277	Ethofat 142/20	2.03	Continuous
Medium Aromatic Oil 8277	Triton B 1956	1.65	Lens formation
Medium Aromatic Oil 8277	Nonisol 210	1.51	Lens formation
Medium Aromatic Oil 8277	Solvadine EO	1.57	Continuous
70 Pale Oil	Ethofat 142/20	1.55	Continuous
70 Pale Oil	Triton B 1956	1.23	Continuous
70 Pale Oil	Nonisol 210	1.39	Lens formation
70 Pale Oil	Solvadine EO	1.38	Continuous



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formed continuous surface films having high spreading pressures.

(C) A comparison of the spreading pressures of the surface active agents was made by adding 0.5 per cent quantity of each agent to kerosene having 1.0 per cent DDT. This solution was applied to the hydrophil balance at the rate of one gallon per acre. Six of the surface active agents ("Solvadine E O"; "Triton B 1956"; "Ethofat 142/20"; "Nonisol 210"; "Sellogen O-141"; and "Alkaterg-C") formed continuous oil films with high spreading pressures.

(D) In order to obtain formulations having the most desirable spreading qualities the four best oils were tested in all combinations with the four best spreading agents. Results obtained, based on physical measurements with the hydrophil balance indicated that the solutions containing kerosene, 1.0 per cent DDT, and 0.5 per cent "Ethofat 142/20" produced a stable film having the highest spreading pressure.

(E) Larviciding tests also indicated that this kerosene solution containing 1.0 per cent DDT and 0.5 per cent "Ethofat 142/20" was most effective. Fifteen minutes after application of the solution at the rate of one gallon per acre, a knockdown of fifty per cent of the larvae was obtained. A 100 per cent kill was obtained in 45 minutes. The surface film was continuous, uniform, and was able satisfactorily to penetrate biological films on the surface of naturally occurring streams and ponds. In protected areas, films remained stable for seventy-two hours.

(F) In control basins in which a kerosene solution containing 0.5 per cent "Triton B 1956" and 1.0 per cent DDT was used, a 30 per cent mortality of mosquito larvae was observed after 45 minutes. Although "Triton B 1956" produced a stable film when tested with the hydrophil balance, immediate lens formation, with an uneven distribution of surface film was observed when applied to the larger test basins. It failed to disrupt the biological films and was not able to penetrate surface debris uniformly.

(G) From the results obtained in the foregoing tests, 0.5 per cent "Ethofat 142/20" is the most

suitable spreading agent for DDT-oil larviciding formulations.

References

- (1) RENN, C. E. The crushing strength of biological films on natural waters

- J. Nat. Malaria Soc. 1:45-55, 1942.
(2) JOHNSON, H. A., and GOODMAN, W. L. DDT in oil as a mosquito larvicide—Pub. Health Rep. 62: Aug. 15, 1947.
(3) TARZWELL, C. M. Effects of DDT mosquito larviciding on wildlife—Pub. Health Rep. 62: April 11, 1947.

Effect of Insecticides on Fabrics, Carnauba Substitute Studied in Kansas

KANSAS STATE AGRICULTURAL EXPERIMENT STATION, Manhattan, Kans., recently has been conducting investigations of the effect of laundering with certain detergents and the effect of insecticides on fabrics. A third project involves a search for a satisfactory moth proofing formulation and a fourth is concerned with a Carnauba-like wax derived from sorghum grain bran.

In the detergent study approximately 80 uniforms in regular use have been divided into four groups, each of which is consistently washed with either bar soap, soap powder, a retail synthetic detergent or a detergent used by a commercial laundry. A portion of plain yardage is also being laundered with each group. Comparison is made with the effect of each product on the fabric when merely laundered repeatedly and when subjected to wear and then laundered.

Part of the fabrics are being laundered with a number of detergents, using the Launder-ometer. Comparisons will be made when the fabric is laundered under laboratory conditions, under home conditions and by a commercial laundry and with that subjected to wear and laundering. In the study of permanence and effect on fabrics of toxic and non-toxic insecticide sprays available for home use and certain specially prepared formulations, products used included "Larvex," "Mirra Moth," "Permo," DDT and chlordane sprays. Specimens were dipped into oil solutions of DDT, technical chlordane, "Hepta-Klor" and technical parathion.

No change in color or breaking strength of the treated fabrics oc-

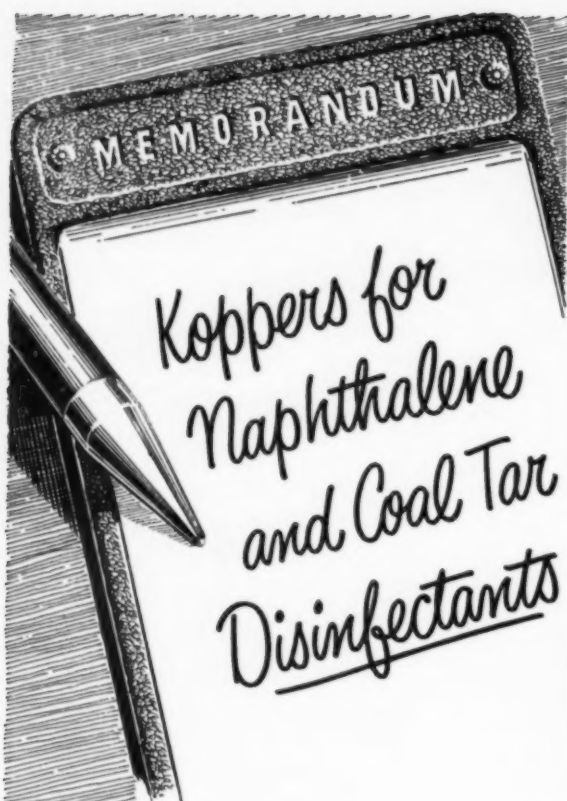
curred, except that white fabrics were stained, the Kansas station's report states. No insecticide proved to be wholly permanent to light, laundering or dry cleaning. Non-toxic sprays furnished as much protection as toxic ones. In the strengths and amounts used, DDT rated first for the unprocessed, light-exposed and laundered specimens. Technical parathion best withstood dry cleaning.

A further study is being made at the Kansas station of methods for protecting fabrics susceptible to injury by insects, this being predicated on the claim that, at present, no satisfactory formulation exists for mothproofing fabrics at home. A preliminary evaluation was made of the insecticidal effectiveness of chlordane, "Hepta-Klor," DDT, BHC and parathion against the larvae of the black carpet beetle, and the webbing clothes moth, but results were not made public in the report.

In the Kansas study of sorghum bran a solid, crude wax was extracted from the bran by the solvent extraction process. This wax was found to have characteristics similar to those of Carnauba wax and a detailed study was begun of the properties and composition of this sorghum wax.

Chlordane Emulsifiers

The preparation of emulsifiable concentrates for technical chlordane is the subject of a recently revised supplement released by Julius Hyman & Co., Denver, Colo. The pamphlet lists emulsifying agents suitable for chlordane, describes various types of formulations and discusses the water emulsions from chlordane concentrates.



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Wax Hearing...

Floor Wax Makers Oppose Rules, Seek Broader Product Definition

OBJECTIONS to the need for trade practice rules for the floor wax products industry were strongly voiced by industry representatives attending the final hearing on rules held by the Federal Trade Commission, in Washington, D. C., July 11. Representatives of floor wax manufacturers urged that if such rules are imposed on the floor wax products industry the definition of "wax" and "industry product" be broadened to cover all "floor wax" products, whether or not they contain wax. Industry members were in almost complete agreement on their objections to the need for rules and to the definitions.

The July 11 conference, the third and final one dealing with trade practice rules for the floor wax products industry, was the second public hearing and was attended by about 50 representatives of manufacturers of floor wax and other wax products.

A request was directed to the F.T.C. presiding officer that no rules be adopted. The action was based on a resolution to that effect which was unanimously adopted at an earlier meeting of the industry committee originally asked to formulate a set of rules.

Changes recommended at the July 11 hearing ranged from the elimination of single words or phrases to the dropping of whole sections of the proposed rules.

Sharp disagreement between industry representatives and the Commission arose over Rule 17, which the F.T.C. described as a restatement of the Robinson-Watson Act to provide the business man with an easily understood version of the law. Industry members present felt Rule 17 was an F.T.C. "interpretation."

In opposition to Rule 2, which sets definite percentages for content

in liquid and paste waxes and solids contained in floor waxes, industry members argued that products can be made to conform to the rule that should not be called waxes. In addition, it was pointed out, the use of an arbitrary percentage of wax content as a standard would cause the public to be misled. Instead, an industry spokesman declared, the only practical test for determining whether or not a product may be called a wax without deceiving the public is a functional test of the nature of the film remaining on the surface after the solvent or other carrier has evaporated. Such a determination cannot be made on a percentage formula basis.

The Sigler test to measure slip resistances as provided in Rule 4 provoked considerable adverse comment on the part of industry people. They expressed the view that neither the Sigler method nor any other test will measure the slip hazard on a floor. The method used by the Underwriters' Laboratories was recommended as the only one that has received any degree of acceptance by the industry. For that reason its scrapping in the proposed rules was objected to by industry representatives.

The specific exclusion of paints, varnishes and lacquers from the proposed rules was requested by Joseph F. Battley, president of the National Paint, Varnish and Lacquer Association. He also pointed out that trade practice rules upon which manufacturers cannot agree prove impractical and unenforceable.

Among changes asked in the definition of "wax" and "industry product" was one by a representative of E. I. du Pont de Nemours & Co., Wilmington, Del., that the definition include its synthetic wax, "Alathon F," a polymerized ethylene of heavier

weight than ordinary paraffin wax. The company spokesman also requested that its claim for its colloidal silica additive to wax, which is said to impart hardness and anti-slip properties to floor wax, be permitted under the rules.

Issue Law Revisions

Revision in state and federal economic poison laws covering insecticides, fungicides, disinfectants, rodenticides, herbicides, and allied products for 1948-49 have been issued as a printed supplement to its Compilation of Economic Poison Laws by the National Association of Insecticide & Disinfectant Manufacturers, New York. The printed revisions which include all new laws and regulations are in loose leaf form intended for inclusion in the original compilation. Copies of the revisions have been sent to all NAIDM members.

The revisions include forty pages of new regulations under the new U. S. Insecticide, Fungicide and Rodenticide Law, law changes and regulations for fourteen states and for Hawaii and Canada. A new chart showing the labeling and registration requirements of all states at a glance is also included. Author of the revisions, as of the original Compilation, is John D. Conner, Washington attorney and NAIDM general counsel. Further information about the revisions is obtainable from the NAIDM office, 110 East 42nd St., New York.

Hercules Shifts Thouron

Henry A. Thouron, assistant director of sales of the synthetics department of Hercules Powder Co., since 1947, recently joined the company's export department. Late in September he will transfer to Holland as special assistant to C. M. Rutteman, director of N. V. Hercules Powder Company in The Hague. He will cover sales of Hercules products in western Europe. Mr. Thouron joined Hercules in 1934 as a member of the Naval Stores Department. He was sales representative for the department in New England in 1940, when he enlisted in the Pennsylvania National Guard. He was commissioned a second lieutenant the following year.

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TECHNICAL BRIEFS

From Current Literature in the Sanitary Products Field

Dermatitis from Pyrethrum

Administered daily an insect repellent cream containing 2.5 grams of a 40 per cent commercial pyrethrum concentrate per 100 ml. produced skin irritation in 10-25 per cent of individuals tested. The irritant factor was confined to the pyrethrum content. When petroleum ether extracts of pyrethrum flowers were chromatographed on fullers' earth the irritant factors were adsorbed more strongly than the pyrethrins. Petroleum ether was more satisfactory than ethylene dichloride in this separation. The irritant could be recovered by acetone elution. There was no obvious correlation between the pyrethrin content of various preparations and the irritation produced. K. A. Lord and C. G. Johnson, *Brit. J. Dermatol. Syphilis* 59, 367-75.

New Quaternaries

A method is described for preparation of (3-myristoyl aminopropyl)-dimethyl benzyl ammonium chloride, melting at 54°C. This compound forms a clear 25 per cent solution in water and is a germicide effective against *Staphylococcus aureus* in a dilution of 1:25,000 at 37°C. in a five minute test, and has a phenol coefficient of 277-333. It is also a wetting agent for cotton fabrics. Similar compounds were prepared which were also germicidal. E. W. Cook and P. H. Moss, to Am. Cyanamid Co. U. S. Patent No. 2,459,062.

Agent for Athlete's Foot

A 2.5 per cent solution of 8-hydroxy quinoline in 50 per cent alcohol (Octofen), used locally in 40 cases of athlete's foot, gave clinical cures in one to two weeks in mild cases, two to four weeks in moderate cases, and up to three months in severe cases. *In vitro*, when tested against a 10-day-old culture of *Trichophyton mentagrophytes*, 0.75 per cent of 8-hydroxy

quinoline in 95 per cent alcohol, and 2.5 per cent in 50 per cent alcohol were fungicidal in one and five minutes, respectively, while 0.75 per cent of the compound in 50 per cent alcohol was not fungicidal in one minute. K. A. Oster and M. J. Golden, *Exptl. Med. Surg.* 1, 37-45 (1949).

Toxicology of DDT

DDT preparations act primarily as cerebrospinal poisons. The action as a contact insecticide probably does not depend entirely on lipid solubility as DDT can act directly on the chemo-receptors as an irritant. The toxic action of DDT on insects depends more on the localization and number of receptors, a species specific characteristic, rather than on the constitution. The following are tolerance doses in mg. of various warm-blooded animals: poultry, weight 0.5 kg., 250-500 mg.; guinea pig, 0.6 kg., 300-500; cat, 2.5 kg., 300-500; dog, 1.5 kg., 500-700; sheep, 30 kg., 1500; cattle, 600 kg., 2000 mg. Symptoms of DDT toxicity are similar in all species, being marked by trembling of the entire body.

In human subjects 250-1000 mg. can be tolerated without serious toxic manifestations. However 1500 mg. given suspended in milk and cod-liver oil brought about serious toxic symptoms. H. H. Velbinger, *Pharmazie* 2, 268-74.

Effectiveness of Aerosols

Data on the effect of particle diameter and wind velocity show that the toxicity of DDT aerosols to mosquitoes follows the law of deposition of aerosols on geometric objects, as calculated by Sell. Determination of toxicity is proposed making use of a wind tunnel instead of a Peet-Grady chamber. Deposition from an aerosol is an inverse exponential function of the distance from the source. The constant involved depends on a number of

factors, such as turbulence, particle size, density of vegetation, wind velocity etc.

This exponential relationship makes necessary careful control of particle size as well as selection of favorable meteorological conditions. A generator has been developed by which large-scale control of mosquitoes by ground dispersal is possible over difficult and inaccessible terrain. V. K. LaMer and S. Hochberg, *Chem. Reviews* 44, 341-51 (1949).

Pesticidal Smokes

Smoke-producing generators incorporating synthetic insecticides have been studied by Imperial Chemical Industries, Ltd. The basis of the new heater compositions has been ammonium nitrate using chromates and dichromates as catalysts, or charcoal as activating agent. By means of such catalysts stable low-temperature combustions can be achieved; they permit the smooth volatilization of the pesticides in the form of smoke, with little loss of biological activity.

The combination of heater and pesticide has been made nonexplosive; fire hazard has been reduced to negligible proportions. A smoke composition based on ammonium nitrate and potassium chromate gives a self-sustained reaction at about 330°C. It permits direct incorporation into the mixture of a high proportion of benzene hexachloride. Such smoke mixtures disperse the insecticide with a very high degree of efficiency. By use of a smoke mixture based on ammonium nitrate and ammonium dichromate it is possible to almost double the per cent of insecticide in it, whether this is benzene hexachloride or DDT. In these mixtures the reaction takes place about 100°C. higher, but it proceeds at about one quarter the rate of that of the potassium chromate mixture. In these slower reactions the insecticide deposit is in a more finely divided form, resulting in a higher insecticidal efficiency.

The smoke technique can be applied generally to volatile insecticides and fungicides, and provides a highly efficient method of dispersion. J. Taylor, *Research* 2, 98-9 (1949).

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Solvent Effect on DDT

Glass lantern slides were sprayed with DDT in water, kerosene, and a chlorinated solvent ("Velsicol AR 50"). The slides were dried and the deposits determined by weighing. For 20-second spraying time, the average deposit in grams depended on the vehicle as follows: Kerosene 0.25; chlorinated solvent 0.34; water 0.55. Technical DDT mixed with an equal quantity of pyrophyllite in a ball mill was suspended in each vehicle at 0.25 gram of DDT per 100 ml. The mixtures were sprayed on galvanized wire screens and the screens with their dried residues were tested on houseflies. The deposits from the water suspensions gave the highest toxicity, followed by those from kerosene and chlorinated solvent. N. Turner and N. Woodruff, Conn. Agr. Expt. Sta., Bull. No. 512, 93-7.

Fungicide Weathering Tests

Textile materials treated with fungicides and evaluated for resistance to weathering on outdoor exposure indicated many complex problems. A study of a number of impregnated samples using different fungicides led to the following conclusions:

1. Cotton fabrics treated with copper naphthenate deteriorated more rapidly on outdoor exposure than did untreated fabrics.
2. Free copper sulfate does contribute to the acceleration of tendering. Copper naphthenate prepared in the laboratory from copper acetate was not as effective a fungicide with respect to soil contact as commercial copper naphthenate.
3. Phenyl salicylate, an ultraviolet radiation absorber, did not inhibit or decrease degradation of cotton exposed to weathering.
4. Pyrogallol gave some promise of decreasing weathering degradation of fabrics.
5. The role of the agencies comprising "weather" requires further elucidation. Fabrics lose copper when exposed in a dry climate without rainfall. The amount lost is not determined by the amount of rainfall alone.
6. Fabrics treated with copper phenyl naphthenate deteriorated at about

the same rate as when treated with copper naphthenate in weathering exposures but were somewhat more resistant to soil contact. H. Bogaty, *Am. Dyestuff Reporter* 38, 253-9 (1949).

Fungistatic Power

The fungistatic activity of 127 benzene derivatives is reported and their behavior is related to structure, and in less detail, to solubility. The aromatic nucleus is more effective in increasing fungistatic activity than its saturated counterpart. The effect of hydrophilic and nitro groups substituted in the benzene ring can differ markedly according to the position of substitution relative to groups largely present. Halogen substitution is generally beneficial and is less affected by position. Nuclear substituted 4-hydroxybenzoates seem to behave biologically as substituted benzoic acids rather than as substituted phenols.

Introduction of alkyl groups and alkyl esterification and etherification are generally beneficial, although the increased activity usually approaches an upper limit in the alkyl series relatively early, that is, with three to six carbon atoms. The carboxyl structure of the acid and ester appears to be important since the analogous carboxyl compound is definitely less active. Methylene groups between the benzene nucleus and the carboxyl group lower effectiveness.

There is some relationship between inhibitory power and decreasing water solubility, although many deviations are found from a simple linear relationship. More specific factors appear to enter. Most of these investigations were made with use of a strain of *Aspergillus niger*. G. W. K. Cavill, J. N. Phillips, and J. M. Vincent, *J. Soc. Chem. Ind.* 68, 12-16 (1949).

Extraction of Derris

Use of the Waring "Blendor" in determining total chloroform extractives and the rotenone content of powdered derris roots is as effective as the standard procedure. Extraction time is shortened from several hours to 5 minutes. R. H. Hageman, *Anal. Chem.* 21, 530 (1949).

SODA ASH . . .

(From Page 27)

facture of bar soaps. By adding water and alkaline soap builders, the soap can be converted into lower percentage soap powders by chilling in frames or on the floor.

This procedure, used in a small plant with only a very moderate investment for equipment, has been found by the writer to work out very well.

Synthetic detergents formed by sulfonating aryl-alkyl compounds can be neutralized after sulfonation without any washing by a process for which a patent has recently been applied. The process involves simply the slow addition of 30 to 40 parts soda ash to 10 parts of sulfonation product while stirring in a dry mixer or better the sulfonation product of the soda ash. As the reaction liberates a considerable amount of carbon dioxide gas and causes the reacting mixture to swell, it is important that the addition be made slowly during agitation and that agitation be allowed to continue until the major portion of the gas has been evolved.

Disinfectants Under Fire

A recommendation that disinfectants used by the state of Mississippi be manufactured at the state penitentiary using 400 or 500 disabled prisoners was made recently by a legislative committee. The committee reported that it is "very much disturbed about the enormous amount of money being spent by state institutions for the purchase of disinfectants and certain chemicals." Some institutions in the state are reported by the group to be paying as high as \$2.20 a gallon for liquid soap, while others are buying it for approximately 25 cents.

"We believe that this racket is being encouraged by the salesmen delivering certain premiums to the purchasers of the disinfectant," the report of the Legislative Recess Investigating Committee states.

There is a law authorizing state manufacture, but no funds for the establishment of the plant have been voted by the legislature.

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HYPOCHLORITES

(From Page 125)

and stain remover for the home laundry, it is recommended (29) that a chlorine rinse be used between loads in public automatic laundry machines to insure bacteriologic decontamination.

In hospitals, schools, and other public buildings, hypochlorites help to eliminate unpleasant odors and maintain sanitary conditions in washrooms, showers, locker rooms, lobbies, corridors and other facilities used by large numbers of people.

Large quantities of hypochlorite, especially dry powdered preparations, are used to purify water supplies, make swimming pools safer, and render sewage less objectionable. For the disinfection of water supplies, high test calcium hypochlorite may be applied to the water in solution form or by means of dry feed machines. (30) Such products are employed for the regular disinfection of smaller water supplies; for the chlorination of newly-laid or newly-repaired pipelines; as an emergency source of chlorine in times of flood, drought, fire, or temporary interruption of regular chlorinating operations; to combat algae or bacteria in reservoirs, standpipes and the like; for algae control in condenser water for power and refrigerating plants, and in the treatment of filter sand. (31)

In swimming pool sanitation the high test hypochlorites have been used for the disinfection of pool water and for the control of algae. Such compounds are widely used for treating the water of smaller pools, for indoor pools where liquid chlorine might be dangerous, and for the emergency treatment or "peak load" chlorination of large pools. Hypochlorites are also valuable for general sanitation around the premises. The solutions are effective for disinfecting towels and cotton swim suits, for pool cleaning, and for sanitizing shower rooms, toilets and walks.

Fungicidal foot baths made with hypochlorites have long been considered effective as a means of preventing the transmission of athlete's foot. (32) However, some doubt as to the value of such baths has been ex-

pressed in *Hygeia*. (33) Here it is advised that frequent cleaning of the floor with hot water or hypochlorite solution—or a combination of the two—probably contributes to ringworm control much more effectively than do the foot baths.

Those responsible for the maintenance of small sewage plants and for the care of sewage systems that operate intermittently or seasonally have found that high test calcium hypochlorite products provide a convenient means of disinfecting effluents. In larger plants, such compounds provide a standby source of chlorine. In both large and small plants, the hypochlorites serve to control odor, for reducing biochemical oxygen demand and for controlling organisms in filters, ponds and receiving streams.

Bibliography

- 1) Bartlett, P. G.: *Chem. Ind.* 64:215, 1949.
- 2) Lesser, M. A.: *Soap & Sanit. Chem.* 24:37, Nov. 1948.
- 3) Anon.: "Perchloron," Philadelphia, Pennsylvania Salt Mfg. Co., 1946, 47 pp.
- 4) McCulloch, E. C.: "Disinfection and Sterilization," Ed. 2, Philadelphia, Lea & Febiger, 1945, pp. 327-345.
- 5) Charlton, D. & Levine, M.: "Germicidal Properties of Chlorine Compounds," Iowa Eng. Exper. Station Bull. 132, Ames, Iowa State College, 1937, pp. 14-5.
- 6) McCulloch, E. C. & Costigan, S.: *J. Infect. Dis.* 59:281, 1936.
- 7) Charlton, D. & Levine, M.: *J. Bacteriol.* 30:163, 1935.
- 8) Wolf, J. & Cousins, C. M.: *Nature* 158:755, 1946.
- 9) Schwarcz, L.: "Sanitary Products," New York MacNair-Dorland Co., 1943, pp. 54-60.
- 10) Neave, F. K. & Hoy, W. A.: *J. Dairy Research* 15:24, 1947.
- 11) Johns, C. K.: *Canadian J. Research* 25F:76, 1947; *ibid.* 26F:91, 1948.
- 12) Johns, C. K.: *Am. J. Pub. Health* 37:1322, 1947.
- 13) Shere, L.: *Brewers Digest* 23:103T, 1948.
- 14) Ridenour, G. M. & Armbruster, E. H.: *Am. J. Pub. Health* 38:504, 1948.
- 15) Soule, E. C. & Robson, H. L.: U. S. Pat. 2,429,531, 1947; Brit. Pat. 588,212, 1947.
- 16) Cunningham, G. L.: U. S. Pat. 2,446,689, 1948.
- 17) Bruce, W. F.: Brit. Pat. 563,136, 1947.
- 18) Langwell, W. H.: Brit. Pat. 606,431, 1948.
- 19) Rogers, D. M. & Voge, C. I. B.: Brit. Pat. 542,209, 1941.
- 20) Cousins, C. M. & Wolf, J.: *Proc. Soc. Applied Bact.* 1946, pp. 15-19 (through) *Chem. Abstr.* 41:3833, 1947.
- 21) Braudner, J. A., Lockwood, W. H. & Russell, K. L.: FIAT Technical

- Bulletin T-46, (through) *Soap, Perf. & Cosmetics* 21:565, 1948.
- 22) Kalsudian, V. M.: Canadian Pat. 403,648, 1942.
 - 23) Riggs, W. S. & Peschko, N. D.: U. S. Pat. 2,415,657, 1947.
 - 24) Anon.: "Lithium Hypochlorite," Prod. Devel. Booklet LH-1, New York, Solvay Process Div., Allied Chem. & Dye Corp. 1947, 29 pp.
 - 25) Lesser, M. A.: *Soap & Sanit. Chem.* 24:40, May 1948.
 - 26) Booker, W. E.: *Food Packer* 29:28, May, 1948.
 - 27) Mallman, W. L.: *Brewers Digest* 22:51, Feb. 1947.
 - 28) Mallman, W. L., et al.: (through) *Manuf. Chem.* 18:252, 1947.
 - 29) Gilson, S. R. & Bartfeld, H.: *Military Surgeon* 103:470, 1948.
 - 30) Anon.: "Alkalies and Chlorine in the Treatment of Municipal and Industrial Water," Ed. 3, Bull. No. 8, New York, Solvay Process Div., Allied Chem. & Dye Corp., 1947, p. 61.
 - 31) Anon.: "Mathieson Chemicals," New York, Mathieson Chem. Corp., 1948, pp. 23-4.
 - 32) Hadfield, W. A.: *Soap & Sanit. Chem.* 19:105, Aug. 1943.
 - 33) Editorial: *Hygeia* 25:824, 1947.

Mothproofed Garments

Silicofluorides of sodium, zinc, and magnesium have been used for mothproofing wool garments, either by spraying on an aqueous solution, or more recently by adding the solution in place of part of the water in the stock detergent solution in the cleaner. A number of mothproofed garments have been observed to change in color or rather in shade. Some of these discolorations can be traced to the presence of iron, probably introduced as a contaminant of the acidic silicofluoride solution when used in a spray gun, or kept in steel containers.

Damage can also occur in rayon garments by the effect of the agent on acid-sensitive dyes. This can occur in cleaning plants which use silicofluoride mothproofing preparations dispersed in their moisture detergent stock solution, where this stock solution is used for both wool and silk loads. C. H. Bayley, Tech. Bull. Canadian Research Inst. Launderers and Cleaners, Jan. 15, 1949.

Antiseptic Floor Dressing

"Trol-Dus," a new antiseptic floor dressing, was announced recently by Fuld Brothers, Inc., Baltimore. The new product is said to effectively control floor dust and dust-borne virus and bacteria.

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AEROSOLS

(From Page 113)

moth product to the average size wardrobe will show that the consumer is asked to perform a tremendous task.

We know of the ready acceptance of the aerosol method for use against ordinary flying household insects. One of the reasons for this acceptance is convenience and ease of use. Ease of use takes on considerable significance when it is realized that consumers in using a moth product of the hand spray type are very often required to spray, in a very short period of time, anywhere from one quart to a gallon of material to protect their clothing thoroughly. We have calculated that the average size wardrobe consists of from five to ten garments and, aside from treatment of rugs and other woolens around the house, requires ten thousand foot pounds of energy depending on the efficiency of the sprayer. It must be realized that this is too much to ask of the consumer, as may be witnessed by the frequency of complaint of the difficulty of application.

Question 8:

A question was directed at the panel to determine whether insects, other than the clothes moth, were responsible for woolen moth damage.

Comment:

93.1%, with no knowledge of the damage of the carpet beetle, attributed most of the damage to the clothes moth, whereas 4.2% blamed the carpet beetle, with the remaining 2.7% attributing it to other insects.

Question 9:

In which months of the year did you purchase the moth product?

Answer:

7.3%	46.3%
December	March
January	April
February	May
22.0%	24.4%
June	September
July	October
August	November

Although it is generally known that moth damage in our modern society of heated dwellings, etc., can occur

throughout the year, there is a definite seasonal aspect to this field. Possibly it is governed primarily by the fact that the product was bought at a time when garments are either being put into or taken out of storage.

To clear up some of the confusion surrounding products, we decided to define our terms.

As we see it, the products fall into three groups:

a) Elimination

Elimination we define simply as the physical removal, by brushing. In addition there is the use of paper products, such as moth bags, which may not involve the use of any toxicants but merely act to separate the insect from the woolens.

b) Eradication is the use of toxicants to kill the insects that are present at the time of treatment and which has very little if any residual effect. This method will not kill the insect or protect the clothing from moth damage due to a reinfestation.

c) Protection or Moth Proofing

Protection involves the use of toxicants which form a chemical barrier between the woolens and the insect. In this method the toxicant acts as a contact insecticide as well as a stomach poison. "Moth proofers," when applied in accordance with the instructions, should deposit a residue which will protect articles from all moth damage for at least one year.

Our survey pointed up a demand which exists in other fields: that of specialization. The majority of consumers desire to treat their woolens by using a specific rather than an all-purpose product, which they feel does not have as much merit because of the product usage and paramedical theory. In order to satisfy this quest for specificity, all too often a manufacturer may take a standard product which is known as an all-purpose fly spray and simply change the label without attempting to design a new product for the specific control of insects and for its application on clothing.

It has been pointed out by a number of workers (Lesser: 1949) (VonBergen: 1946) that the newer and more prominent types of moth

products are of the contact type. They are both eradictory as well as moth proofers since they leave effective residues which not only kill on contact, but are also effective stomach poisons. In this class we find such materials as benzenehexachloride, DDT, and methoxychlor (Mail: 1947). Of the above group, methoxychlor has the greatest promise since it is the safest of any of the newer chlorinated insecticides and has more desirable skin absorption toxicity characteristics than a number of the non-chlorinated types. With regard to its effectiveness as a moth proofer, it has been reported (Krister: 1948) that no damage to men's woolen suiting resulted 2½ years after treatment—this having been subjected to standard ASTM methods at a dosage rate of .29% methoxychlor based on the weight of the fabric.

In our own tests, which were very extensive and run by three independent laboratories, we have had no damage on garments treated with methoxychlor in the ratio of .2% by weight of the garment to .5% by weight of the garment after a year. Tests carried out by us indicate that methoxychlor is not only larvacidal and lethal to adult moths and carpet beetles, but is also ovicidal. Further tests are being carried forward since it is indicated that much lower dosage levels can give practical mothproofing.

Summary

(1) Although proved effective, it is indicated that fumigants are not being used properly either due to poor construction of sprayers or lack of facilities in the average home to keep clothes in airtight containers. Another drawback to the use of fumigants is the need for tying up closet space by sealing for long periods of time. Therefore, actual moth protection cannot be counted on too strongly under practical home conditions by the use of highly volatile materials alone.

(2) It is indicated that best positive results can be insured by the use of actual mothproofers, which, when applied to the garment will mothproof it for at least one year

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under actual use conditions not requiring storage.

(3) Definitions are needed to eliminate the confusion that exists in the consumer mind regarding moth products or broad general claims for them which imply one thing and do another. The representation should be made in clear, factual form; the merits of the product being based on both laboratory and practical tests.

(4) In order to make it possible for the average consumer to take advantage of modern mothproofers of low volatility, the task of preparation, application and storage must be minimized by the use of self-dispensing packages designed for surface application.

BIBLIOGRAPHY

- 1) Anon.: *Soap & Sanit. Chem.* 19: 109, Sept. 1943.
- 2) Mail, G. A.: *Chem. Ind.* 60: 790, 1947.
- 3) Lesser, M. A.: *Soap & Sanit. Chem.* 25: 133, March, 1949.
- 4) Schwarcz, L.: "Sanitary Products," New York, MacNair-Dorland, 1943, pp. 187-192.
- 5) Mallis, A.: "Handbook of Pest Control," New York, MacNair-Dorland, 1945, pp. 207-235.
- 6) Lesser, M. A.: *Soap & Sanit. Chem.* 25: 139, April, 1949.
- 7) Von Bergen, W.: in "Moth-proofing of Woolen Materials in Europe," New York, Textile Research Inst., 1946, pp. 1-3.
- 8) Mail, G. A.: *Chem. Ind.* 60: 790, 1947.
- 9) Krister, G.: Unpublished. Amer. Chem. Society Meeting, Washington, D. C., Sept. 1948.

DETERGENTS

(From Page 29)

ple ask for the old kinds and they ask for the new, and he is still trying to gauge his purchasing to demand, so that the less popular brands do not back up on him. He carries six brands of detergents, but none of the other dealers interviewed carried more than four.

Chicago storekeepers questioned had one complaint in common. Every one of them reported there isn't much profit in handling the new detergents. One man put it this way: "My markup is a fraction of a penny per package. That doesn't pay my labor cost to open the shipping container and put the stuff out on the shelves. If a customer comes in asking for one box and wants me to put it into a paper bag, I lose money

on the sale." He was quite emphatic in his statement that he carries the detergents only because people ask for them.

This complaint emerges as the one serious deterrent to the greatly expanded sale of detergents in Chicago, possibly in Brooklyn and elsewhere, too.

At the convention of the Supermarket Institute in Chicago recently representatives of two of the larger soap and detergent manufacturers present there stated that the markup allowed on their respective widely advertised detergents is the same as that permitted on their regular soap lines. No dealer, to their knowledge, the representatives said, has ever complained about the size of the margin allowed on their soaps.

The dealer whose complaint was quoted to them buys through a cooperative which purchases its supplies at the wholesale carload rate given to all large distributors. According to the two soap manufacturers' representatives this would imply that the dealer gets the same profit per package as any large-scale food store operator with whom he may compete. In addition he may further benefit from his patronage refund derived from savings made possible through his co-op's large scale operations.

Another soap man at the convention offered the suggestion that grocers, like almost everybody else when technological progress is made, hesitate to drop the old and adopt the unknown new.

"They just don't like to cast off from the old, familiar moorings, and sail away on uncharted seas," he said. "Maybe that's what ails this dealer and perhaps some of the others."

Hyman Chlordane Bulletin

A newly revised copy of its technical supplement No. 2B, "Emulsifiable Concentrates and Emulsions of Chlordane," was issued recently by Julius Hyman & Co., Denver. The 24-page booklet is divided into four sections dealing with emulsifiable concentrates of chlordane, emulsifiers, emulsions and charts. Information on physical properties of emulsifiable concen-

trates of chlordane, composition and types, storage, labeling requirements is given in the book. There is a general discussion of emulsifiers and another section on the preparation of emulsions. Weight-volume relationships of chlordane and chlordane concentrates, volume of water required for given volume of concentrate and volume concentrate required for given water volume are covered in charts. Copies are available to qualified persons.

Mildewproof for Linen

Sodium pentachlorophenate, a water soluble fungicide sold under the trade name, "Biolite," is now available to the laundry and linen supply trade as a mildew preventive for linens, it was announced recently by Monsanto Chemical Co., St. Louis. The compound, which does not require special equipment or handling, is applied in the final clear rinse of the linens. The action of the souring rinse, which follows in most laundering formulas converts the water soluble "Biolite" into an insoluble mildew inhibitor that becomes part of the fabric's fibers. It will remain in the fabric until re-washed, when the high alkalinity of the initial sudsing operation re-dissolves the chemical, according to a company spokesman. The compound is used at the rate of one ounce for five gallons of free water. "Biolite" may be used on all types of linen items, both white and colored, the Monsanto announcement states.

New DDT Diffuser

"Volatox," a DDT diffuser in the form of a metal perforated ring that fits over a light bulb and vaporizes the insecticide when the light is turned on, was announced recently by Associated Fumigators, Ltd., London, Eng. The diffuser comes in two parts, one of which slips over the other. The insecticidal material, in the form of a ring fits inside the diffuser, which is open along the inside diameter. The standard type "Volatox" diffuser is less than three inches in diameter, about one and one-half inches deep and contains about 15 grams of DDT, the equivalent of that contained in about a pint of 2½ per cent DDT liquid. The item retails for about 30 cents.

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New Gallowhur Line

A new line of bactericides, germicides, algaecides and fungicides carrying the trade name "Purasan" was announced recently by Gallowhur Chemical Corp., New York. The new products are quaternary ammonium compounds.

At the same time Gallowhur announced the appointment of William J. Shibe, previously in charge of research and manufacturing for Rhodes Chemical Co., Philadelphia, to direct the manufacture of quaternaries. Directing "Purasan" sales is Thomas R. Baravalle, who was formerly a member of the sales staff of Onyx Oil and Chemical Co., Jersey City, N. J.

Mich. Chem. Realigns Sales

Reorganization of its sales activities and the combining of its staff with that of Philip J. LoBue Co., New York, was announced recently by Michigan Chemical Corp., St. Louis, Mich. Mr. LoBue is in charge of domestic sales in the East for Michigan's "Pestmaster" line of DDT insecticides and the company's line of industrial and pharmaceutical chemicals.

L. W. Gopp is in charge of direct export sales for Michigan Chemical and is cooperating with Mr. LoBue on export sales through domestic exporters.

H. T. Hillard is acting as office manager at 230 Park Ave. and expediting and coordinating eastern domestic and export activities with the plant in St. Louis, Mich.

Until arrangements are completed for new quarters, Mr. LoBue will operate out of Michigan Chemical Corporation's present offices at 230 Park Ave.

Brenn on College Board

J. L. Brenn, president of Huntington Laboratories, Inc., Huntington, Ind., was recently named to represent the Huntington College Foundation on the board of Huntington College. The Foundation was organized by

Huntington business men to provide means by which local firms and indi-



J. L. BRENN

viduals may provide financial assistance to the college. Mr. Brenn is also a member of the board of governors of the National Association of Insecticide & Disinfectant Manufacturers.

Knapp Supply Co. is 75

Knapp Supply Co., Muncie, Ind., recently observed its 75th anniversary by issuing a commemorative booklet recounting the company's long career as a janitor supply house with a review of the highlights of its history. The booklet also contains a message from W. E. Price, president.

DuBois Joins West Disfg.

Adrien DuBois has joined the technical staff of the West Disinfecting Co., Long Island City, N. Y., as a chemist to conduct research work. Mr. DuBois was formerly associated with Fuld Brothers, Inc., Baltimore.

Ross Elects Officers

Rudolph E. Sievert, who has been associated with the firm for 31 years, was elected president of Frank B. Ross Co., Jersey City, N. J., importer and refiner of waxes, at a meeting of the board recently. Frank B. Ross was elected chairman of the board and Ernest J. Sievert and August A. Arnold named vice-president and sec-

retary-treasurer, respectively. Mr. Arnold is a veteran of 29 years with the concern, while Mr. Sievert's term of service is 10 years. The company was founded by Mr. Ross in 1902.

U.S.D.A. Names Carter

Dr. Walter Carter was recently appointed by the U. S. Department of Agriculture as organizer and director of investigations toward control of the oriental fruit fly in Hawaii. The announcement was made recently by Dr. P. N. Annand, chief, Bureau of Entomology and Plant Quarantine, U.S.D.A., Washington, D. C.

New Uncle Sam Catalog

A new catalog illustrating and describing many of its sanitary chemical products was issued recently by Uncle Sam Chemical Co., New York. New items shown in the catalog, which is available to distributors and jobbers on request, include neutral synthetic cleaners, disinfectants containing sanitizers and plastic floor finish. In addition to manufacturing a complete line of such sanitary chemicals as disinfectants, insecticides, soaps, deodorants, cleaners, etc., the firm is a direct distributor for Hudson electric and hand sprayers and dusters and a wholesale distributor on soap dispensers. Uncle Sam also produces private brand labels in its own printing plant.

Young Succeeds Rhodes

Kinetic Chemicals, Inc., Wilmington, Del., recently placed Dr. Edmond G. Young in charge of sales of "Freon" fluorinated hydrocarbon propellants for use in aerosol bombs. He succeeds W. Warren Rhodes, who recently retired. Dr. Young has also been made responsible for providing technical service in the use of the propellants. He joined Kinetic last year, after having spent four years in fluorine chemistry research in Du Pont's Jackson Laboratory at Deepwater Point, N. J.

Acme Sponge Robbed

Acme Sponge & Chamois Corp., Chicago, recently sustained a loss of \$50,000 when burglars entered their warehouse at 2421 W. Division Street and stole 70 bales of imported sponges.



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Insecticides must get into every crack and crevice—under mouldings, behind baseboards, between plumbing—and your sprayer must have complete penetration to reach these hiding places.

Mistmaster Portable Electric Sprayers give perfect and complete penetration. In this patented sprayer, insecticides are first broken into minute particles by a rotary compressor, then warmed above room temperature, and finally, atomized completely by tremendous pressure at the nozzle.

The result is complete penetration. Insecticide floats longer in the air, settles gradually into every possible opening in complete strength, and does a thorough and effective job of coverage.

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New Boyle-Midway Plant in Cranford, N. J.

New Boyle-Midway Plant

Construction of a new, one-story masonry and steel plant at Cranford, N. J., for the manufacture of its line of insecticides, deodorizers, spray wax and conventional waxes and polishes was announced recently by Boyle-Midway, Inc., household products division of American Home Products Corp., New York. The new plant on the Baltimore & Ohio Railroad and close to New Jersey State Highway Route 4 will replace the present factory at 257 Cornelison Ave., Jersey City, N. J. Central offices and laboratories will be housed in the new plant. Executive offices remain at 22 E. 40th St., New York. The new plant was designed by L. J. Wagstaff, chief engineer of American Home Products Corp.

Its exterior combines a green tinted concrete and brick. The new

Cranford plant will provide Boyle-Midway with the latest manufacturing, filling and packaging equipment, plus economies of simplified layout, such as improved materials flow lines and the elimination of materials rehandling, but also complete convenience in loading for trucks and railroad cars. The truck dock is to be enclosed.

Manufacturing and warehousing areas will be 19 feet high; the office, laboratory, packing and service areas 13 feet high. A feature of the plant is a steel decked insulated roof, using waste water as a cooling medium. Heat will be supplied by a low pressure oil-fired steam system. Manufacturing heat will be electric. More than 300 people will be employed in the new plant.

Other Boyle-Midway plants are located in Chicago, Chamblee, Ga., Los Angeles, and Toronto, Canada.

NSDA Meets, Elects Leiter

At its fourth annual meeting held July 14-15 at the Edgewater Beach Hotel, Chicago, the National Sprayer & Duster Association elected C. D. Leiter, general manager of sales of F. E. Myers & Brothers Co., Ashland, O., as president to succeed R. C. Hudson, president of H. D. Hudson Mfg. Co., Chicago, who has served as president of the past two years. Ralph B. Chapin, president of R. E. Chapin Mfg. Works, Inc., Batavia, N. Y., was elected vice-president. D. P. Lewis of H. D. Hudson Mfg. Co., was reelected treasurer and Frank J. Zink and Earl D. Anderson of Frank J. Zink Associates, Chicago, respectively, continue as counsel and secretary.

Elected to the executive board, in addition to the officers, were: T. M. Burton, D. B. Smith & Co., Utica,

N. Y.; P. L. Hauser, Lowell Mfg. Co., Chicago; H. F. Brandt, Dobbins, Mfg. Co., Elkhart, Ind., and R. C. Hudson, retiring president.

NBBB Backs DDT Use

A statement declaring that "there is no reason why properly labeled household insecticides containing DDT should not be advertised and sold to the public" was issued recently by the National Better Business Bureau, New York. The statement, published in the July issue of the Bureau's publication "Do's and Don'ts in Advertising Copy," was issued to allay fears which have led some manufacturers, retailers and other distributors to withhold needed supplies of DDT from sale, according to an NBBB spokesman. The statement is built around replies of various government

agencies concerned with the use of DDT to questions regarding possible health risks arising from its application. The government scientists stated that they knew of no reason why DDT household insecticides, if correctly labeled, should not be advertised and sold to the public. In addition, they pointed out that they deplored fears that have been needlessly raised.

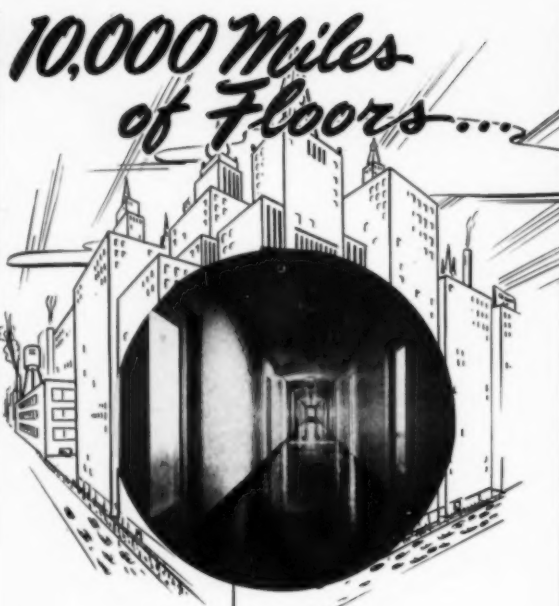
Questioned were Assistant Surgeon General J. W. Mountin of the U. S. Public Health Service, Federal Security Agency; Dr. W. G. Reed, Chief, Insecticide Division, U.S.D.A. and Dr. S. A. Rohwer, Assistant Chief, Bureau of Entomology and Plant Quarantine, U.S.D.A.

NSSA Catalog Plan

An agreement entered into by the National Sanitary Supply Association and Catalog Engineers, Chicago, for the production of catalogs for NSSA members was announced recently. The project was discussed at the annual meeting of the National Sanitary Supply Association in Chicago, in May, at which time members indicated an interest in the plan suggested by Catalog Engineers. The firm is building up a library of product pictures for use in sanitary supply catalogs. The library is to be the property of the NSSA and is for the use of its members only. Upon completion of the agreement the library is to revert to the NSSA. Members wishing to use Catalog Engineers' services contract with the firm on an individual basis. The association is not advancing any funds to Catalog Engineers, as was suggested in the original plan.

Elected to Philipp Board

Bernard L. Landers, vice president in charge of the Boston office of Philipp Brothers Chemicals, Inc., New York, recently was elected to the board of directors of the company. His election was announced officially at a dinner and theatre party which was held in celebration of his completion of 25 years with the organization. During the dinner ceremonies, Mr. Landers was presented with a television set and an engraved silver plaque.



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Revise DDT Rulings

An amendment to the interpretation of the labeling requirements for insecticides containing DDT in the Federal Insecticide, Fungicide and Rodenticide Act was issued recently by the Insecticide Division of the U. S. Department of Agriculture. The changes were included in sections covering directions for the use of DDT for clothes moths and carpet beetles and that dealing with the use of DDT for insects infesting livestock. Paragraph (j) (2) of interpretation No. 16 was changed to reduce the percentage of DDT as a mothproofer from one to 0.5 per cent. Paragraph (k), relating to directions for the use of DDT against insects infesting livestock, has been altered to exclude dairy animals from among those on which use is recommended. It further states: "Insecticides containing DDT should not be used on dairy animals or on forage fed to dairy animals or animals being finished for slaughter. They should not be used in dairy barns pending the carrying out of adequate tests which show under the proposed conditions of use, they will not cause contamination of milk."

New Hyman Laboratories

Julius Hyman & Co., Denver, recently announced the acquisition of new quarters for their biological testing laboratories. The new building comprises eight rooms of approximately 2,800 square feet of floor space. The new facilities will be used for screening new compounds developed in the company's research laboratories; routine testing of chlordane as a quality control; guiding research and production for the development and manufacture of better insecticides; testing customer formulations using chlordane. The laboratory also provides insect rearing rooms and a small greenhouse for growing plants which are native hosts of some insects.

DCAT Meeting a Sellout

Reservations so far received for the 59th annual meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, to be held Sept. 22-24, at

Shawnee-on-Delaware, Pa., exceed accommodations even though the meeting is a closed one, it was announced recently by Robert B. Magnus of Magnus, Mabey & Reynard, Inc., New York, DCAT chairman. The business session will be held on Friday afternoon, Sept. 23, at which time annual reports will be read, an executive committee will be elected and an outstanding industry representative will speak. A reception is to be given Thursday evening and on Saturday night the annual dinner will be held, at which time installation of officers will take place. A feature of the meeting will be a golf tournament and greatly expanded program of sports events.

PCO Meetings

A membership meeting of the Eastern Pennsylvania Pest Control Association will be held in Scranton, Pa., Sept. 15. Joseph R. Hynak is in charge of arrangements.

The newly organized Tennessee Pest Control Association will hold its second meeting at Nashville, Sept. 25-26. Louis Kotler, 619 Exchange Building, Memphis, is secretary.

New Para Producing Plant

A new plant for the production of paradichlorobenzene, monochlorobenzene, muriatic acid and orthodichlorobenzene as co-products in a continuous chemical process was put in operation at Natrium, W. Va., recently, by the Columbia Chemical Division of Pittsburgh Plate Glass Co., Pittsburgh. Under construction for more than a year, the chlorinated benzene producing plant adjoins large chlorine and caustic soda producing facilities constructed during the early years of World War II. The plant cost more than a million dollars. Production of chlorinated benzenes marks Columbia Chemical Division's entry into the field of organic chemical compound production.

SOCMA Meeting Dates

The first fall meeting of the Synthetic Organic Chemical Manufacturers Association will be held at the Hotel Roosevelt, New York, Sept. 14. The next two meetings will be held Oct. 19 and Nov. 9. The annual meeting and dinner of the Association is scheduled to be held Dec. 7.

New light-weight, aluminum aerosol bomb being marketed by General Chemical Division of Allied Chemical & Dye Corp., New York. The new "Airex" bomb features "Gene-tron" dispersant. Fair traded the bomb retails for \$1.69.



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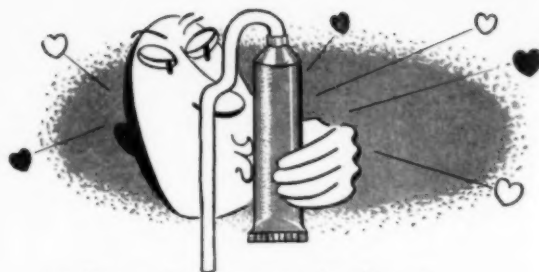
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New Varley "Glyco-Mist"

James Varley & Sons, Inc., St. Louis, recently announced a new, improved "Glyco-Mist," air sanitizer. The product is a combination of triethylene and propylene glycol and a quaternary ammonium compound in a volatile type base suitable for application in aerosol form. Disinfection of inanimate objects, sanitization of the air and neutralization of disagreeable organic odors are claimed for the product. "Glyco-Mist" is offered in apple blossom, pine needle oil, wintergreen and Cashmere odors. The new air sanitizer is packaged in containers ranging in size from half pints to 55 gallon drums. Hydraulic sprayers are included with all small packages as an introductory offer. Literature on the new air sanitizer is also available from the company.

Dunkel BIMS Winner

Paul Dunkel, Paul Dunkel Co., New York won low gross with a 74 at a recent golf tournament of the BIMS, of New York at Baltusrol Country Club, Springfield, N. J. Pel Livsey, Avon Allied Products, and Louis Bezar, Schiaparelli won low nets.

Other prize winners were: Leonard Schultes, Hewitt Soap Co.; Edward Field; Alfred Egerter, Libbey-Owen-Ford Glass Co.; Walter S. Nuckols, Swindell Brothers; Russell F.

Rooks, Avon Allied Products; M. Seltzer; Arnold F. Anderson, Roubechez Import Co.; Ross A. White, E. N. Rowell Co.; Charles Alexander; Albert C. Burgund, Carr-Lowrey Glass Co.; William Murphy; Wallace A. Bush, Ungerer & Co.; C. R. Keeley, *Beauty Fashion*; W. H. Davis; John E. Gabrielson, Avon Allied Products; and Ivon H. Budd, Ungerer & Co.

The July golf outing was held at Winged Foot Country Club, Mamaroneck, N. Y. The final tournament of the year will be held at North Hempstead Country Club, North Hempstead, Long Island, on Aug. 25.

Arthur W. Rinke Dies

Arthur W. Rinke, 64, attorney for John Powell & Co., New York, and brother of George R. Rinke, chairman of the board of the Powell firm, died in Old Greenwich, Conn., July 31, after a long illness. He was an expert on tax and corporation law. A native of New York, Mr. Rinke was graduated in 1906 from Yale University and Columbia Law School. He is survived by his mother, his widow, his brother and three daughters.

Smith Joins Kraft

The appointment of Joseph W. Smith to the sales staff of Kraft Chemical Co., Chicago, was announced recently. He will cover the Mid-West.

Edwards Succeeds Rubert

Wilber Edwards of New York, for 14 years associated with the soap and allied industries and last with National Milling & Chemical Co., Philadelphia, was recently appointed to the newly created position of director of sales of Chemical Manufacturing & Distributing Co., Easton, Pa.

George H. Rubert, who was sales manager of the company for the past ten and one-half years, has resigned to become associated with Janitors Supply House, Inc., Baltimore. He is sole sales representative for the states of Pennsylvania and Delaware. Mr. Rubert will appoint a number of direct representatives to work under his direction in the territory.

Mr. Edwards, who will make his headquarters in Easton, is responsible for all sales activities of the company, including the development of an expansion program which will incorporate plans for new products, new markets and new channels of distribution.

As part of its program of expansion, Chemical Manufacturing & Distributing Co. has announced the addition of two new men to its sales force. Charles A. Reilly has been made district representative in the Pittsburgh area and Walter J. Desborough is covering metropolitan New York City for the company.

Chris Bingham, assistant to Carl Schaad, president of Chemical Manufacturing & Distributing Co., recently resigned to become sales manager of the pigments division of the Columbia Chemicals Division of Pittsburgh Plate Glass Co., with headquarters in Pittsburgh.

Chemical Manufacturing & Distributing Company's newly erected and enlarged office building is nearing completion and is now being occupied by the firm's expanded office personnel.

"Entoma" Being Printed

The eight edition of "Entoma" is now reported to be on the press and will be ready for distribution shortly. The 1949 edition may be had for \$1.50 from Dr. George S. Langford, Department of Entomology, University of Maryland, College Park, Md.



Maximum use of all storage space, vertically as well as horizontally, is obtained in the warehouse area of the new Myerstown, Pa., plant of Winthrop-Stearns, Inc., makers of "Roccal" quaternary ammonium type sanitizing agent.

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METUCHEN, N. J.

CMI Feature Insecticides

New household insecticides packed in tin cans were one of the subjects of the July consumer education program of the Can Manufacturers Institute, it was announced recently. Featured in the campaign were low pressure aerosol insecticides, pump-gun duster cans and the advantages of the newer insecticidal materials.

NSSA Film About Ready

Deliveries on its new color training film, "The Care and Maintenance of Soft Floors," should begin late in August, it was announced recently by Leo J. Kelly, executive vice-president of the National Sanitary Supply Association. Present plans call for the rental and sale of the 16 mm. film, which runs for about 22 minutes. The cost of the film will be between \$160 and \$180.

Bryan Reports on Europe

The business atmosphere in Paris and Geneva seems substantially more optimistic than a year ago, Charles C. Bryan, Firmenich & Co., New York, said upon returning from the firm's annual directors' meeting held recently in Geneva. Mr. Bryan said that the vitalizing effect of the ECA was apparent, either directly or indirectly, in every field.

Dr. Wolf in Teaching Post

Dr. Herbert F. Wolf, Elmhurst, N. Y., recently announced his resignation as a consultant for Brulin & Co., Indianapolis, to become head of the chemistry department at Sacred Heart College of Santurce, Puerto Rico.

John A. Marcuse Dies

John A. Marcuse, 50, executive vice-president of West Disinfecting Co., Long Island City, N. Y., died at his home in Scarsdale, N. Y., Aug. 7. He had been ill since last April. A prominent figure in the sanitary supply business, he was the son of I. J. Marcuse, a director of West and a nephew of M. M. Marcuse, chairman of the board. John A. Marcuse had

been with the firm since his graduation from Johns Hopkins University. At one time he served on the board of governors of the National Association



JOHN A. MARCUSE

of Insecticide & Disinfectant Manufacturers. His wife, Caroline B., and two daughters, Lee and Ann, survive him.

Guenther Completes Tour

Dr. Ernest Guenther, vice president and technical director, Fritzsche Brothers, New York, recently completed a tour of the Pacific coast during which he presented a series of lectures on essential oil production. Dr. Guenther's lectures were illustrated with two colored motion pictures "Essential Oil Production in the Western Hemisphere" and "The Production of Essential Oils in Africa." He also gave an illustrated talk on "Citrus Oils and Their Methods of Extraction" at the Institute of Food Technologists' convention in San Francisco.

Miracloth Names Masury

The appointment of J. A. Masury as Eastern division sales manager of Miracloth Corp., Chicago, was announced recently. He will make his headquarters at 11 W. 42nd St.

Insecticide Legislative Round-up

In a recent round-up of state legislative action pertaining to insecticides, fungicides, rodenticides, etc., the National Association of Insecticide & Disinfectant Manufacturers announced that while the Georgia legislature has adjourned until Jan. 16, 1950, the state's House Bill, No. 608, covering economic poisons may be acted upon at that time. The bill does not provide for optional labeling or registration under protest. It carries an annual registration fee of \$10 per brand, with a \$200 maximum.

South Carolina House Bill 1033 (economic poisons) passed the House and was in Senate committee when the legislature adjourned until Jan. 10, 1950, at which time the bill may be reconsidered.

New Hampshire House Bill 175 on economic poisons passed both House and Senate, but final disposition has not been made known as yet.

In Florida, Senate Bill No. 612 was passed. It provides that all poisons whether liquid or solid can be sold only in bottles distinguished by "rough

or irregular surface—to be determined by the Commissioner of Agriculture." The bill carried an exemption that "nothing in the Act was to apply to economic poisons used for the control of insects, animal pests, weeds or fungus diseases, or to substances sold for use in agricultural, horticultural, industrial or related arts and sciences." Having passed by House and Senate, the bill was vetoed by the Governor. However, a special session of the legislature is scheduled to take place some time this month, at which time the bill could be reconsidered. The Attorney General for the state recently ruled that a vetoed bill could be taken up again at a special legislative session. In which case a two-thirds majority would be necessary for passage.

Two Connecticut Bills, 758 (coloring of insecticides and fungicides) and 760 (covering the sale of sodium fluoracetate) have gone to the Governor for signature.

The Texas House Bill, 420, dealing with the sale and use of 2,4-D is now law.

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